JVC Instructions

3-CCD COLOR VIDEO CAMERA

KY-17

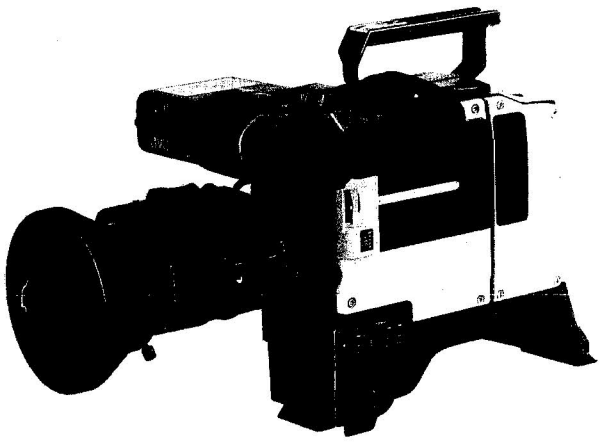


Photo shows the KY-17FIT Video Camera combined with Viewfinder (VF-P10), Zoom Lens (HZ-713) and Camera Adapter (KA-20).

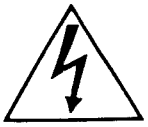
For Customer Use:
Enter below the Serial No. which is located on the top frame. Retain this information for future reference.

Model No. KY-17

Serial No.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Due to design modifications, data given in this instruction book are subject to possible change without prior notice.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

AVERTISSEMENT:
POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

POWER SYSTEM
This color video camera should be used with 12 V DC only.

CAUTION:
To prevent electric shocks and fire hazards, do NOT use other than specified power source.

Système d'alimentation
Cette caméra vidéo couleur ne doit étre utilisée que sur tension continue de 12 V.

Attention:
Pour éviter tout risque d'incendie ou d'électrocution, n'utilisez aucune autre source d'alimentation.

Information for Canada
This product complies with D.O.C limits (C.R.C., C.1374) partaining to class B digital apparatus.

Renseignement pour Canada
Ce produit est conforme aux normes du M.D.C. (C.R.C., ch.1374) s'appliquant aux appareils numériques de classe B.

Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

Thank you for purchasing the JVC KY-17FIT Color Video Camera. This video camera is a compact, sturdy unit designed for portability; making it suitable for a wide range of studio and field applications, including camcorder and separate VCR use. To utilize this product to its fullest, please read this entire booklet for the best understanding of its capabilities and operation.

FEATURES

- **Excellent picture reproduction with 3 interline transfer CCD chips**
  - Compact design, lighter weight and less power consumption than conventional tube cameras.
  - Low lag and a high resistance to image burn-in with no deflection distortion.
  - High sensitivity and S/N attribute to the excellent performance in low light situations.
  - Excellent resistance to vibration and impact.
  - Virturally no misregistration from terrestrial magnetism.
  - 540 TV lines of horizontal resolution is attributed to a high-precision F1.4 prism, coupled with*360,000 pixel CCD's for each of the Red, Green and Blue channels. Due to the use of half-pitch spatial offset, a Y-channel horizontal resolution of 700 TV lines can be obtained.
  - The FIT CCD employed in the KY-17FIT brings quality picture of little smear.
  - RGB use is possible with the optional RM-P200/RM-P300 remote control unit for computer graphics and other RGB applications.
- **Compact, Composite and Y/C Outputs**
  With these three outputs the KY-17FIT can meet a variety of configurations with different VTR cables; Y, R-Y, B-Y for MII, Y/C for S-VHS or Composite for standard use.
- **Built-in Electronic Shutter**
  By employing the use of a variable electronic shutter, blurred images are a thing of the past. Shutter speeds of **1/100th, 1/250th, 1/500th, 1/1000th and 1/2000th are now possible in addition to the standard. This allows for clear visibility of fast moving objects during slow-motion analysis.
- **Character display of operation**
  On the screen of the viewfinder, VF-P10, camera operating conditions are indicated by logical character displays.
- **Microcomputer-controlled automatic set-ups**
  Auto White, Black and Iris functions are controlled by a microcomputer for exact balancing and level adjustments. This one-touch process results in quality pictures with optimum levels under any conditions.
- **Comprehensive functions**
  - Standard 2H contour correction is provided.
  - 3 settings for white balancing.
    Two memory positions are available and a 3200K preset for emergencies, whether you are indoors or out. (Depends on filter wheel settings)
  - Negative and positive signal output is possible for film transfer applications.
    Color-Matrixing for exact camera matching.
- **Meeting studio camera requirements**
  Using the optional remote control unit RM-P200/RM-P300, extension up to 100 m/325 ft (300 m/975 ft by use of RM-P300) is possible. From the RM-P200/RM-P300, the composite and RGB signals (Y/C signals or Y/R-Y/B-Y [for MII] signals can be selected using an internal select switch) can be obtained. (The KA-20 camera adapter is required.)

  Caution:
  When the remote control unit RM-P300 (optional) is used together with, some of its functions not empoloyed in the KY-17FIT are not activated.
- **Camcorder configuration**
  This color video camera is designed to be configured with the JVC BR-S411 S-VHS video cassette recorder, forming a Camcorder configuration.

* 420.000 pixel for E version.
** 1/120 for E version.

PRECAUTIONS

Safety Precautions

- Use only the optional DC-C11/NB-G1 (with BH-P20) Battery Pack or the optional AA-P200/AA-P250 AC Power Adapter. Adapter. (AA-P200 is available for U version only.)
- Do not modify the unit or operate it without cover panel to prevent danger.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- Do not damage or fray the power cord. Otherwise, this will cause leakage or electrical shock.
- If the camera is not going to be used for an extended period of time, leave the power cord disconnected for reasons of safety.
- If there is a danger of being struck by lightning during outdoor shooting, evacuate to a safe place immediately.

Handling Precautions

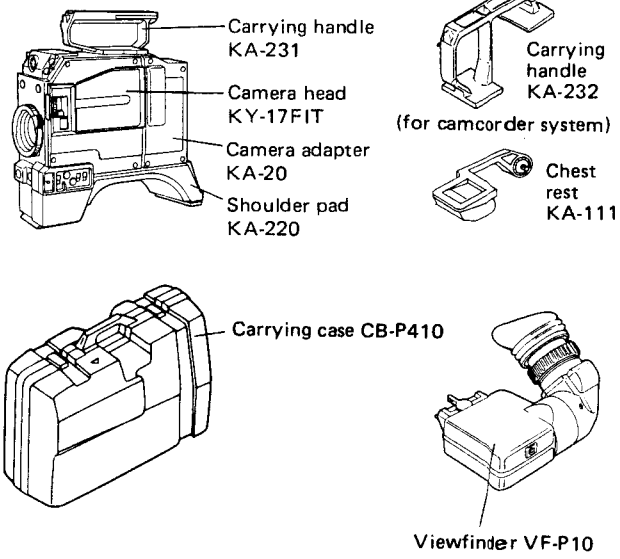
- **Supply voltage**
  Make sure that the power is between 10.5 V and 15 V DC. If the power voltage is too low, abnormal color and increased noise could occur. Do not exceed 15 V DC in any case, or the unit could be damaged.
- **Connecting to a portable VTR**
  Different VTRs require different start/stop triggering modes and connection cables. Before connection, carefully read "Connection to Video Recorder" on page 12.
- **Ambient temperature**
  Do not operate the camera outside a -5°C to +45°C (23°F to 113°F) temperature range. Refer to the corresponding item in the "Specifications" on page 26.
- Where there are strong electromagnetic waves or magnetism, for example near a radio or TV transmitter, transformer, motor, etc., the picture may contain noise and the colors may be incorrect.
- When a wireless microphone or wireless microphone tuner is used near the camera, the tuner could pick up noise. In such a case, select another channel.

STANDARD CONFIGURATION

This camera is provided just as the camera head (KY-17FIT) but it can be systematized appropriately for a variety of applications with the options listed below.

- Configuration

Camera head	KY-17FIT
Shoulder pad (KA-220)	Provided with
Tripod base (KA-500X)	Provided with
Carrying handle (KA-231)	Provided with
Carrying handle (KA-232)	Provided with (for Camcorder system)
Chest rest (KA-111)	Provided with
Camera adapter (KA-20)	Not provided with
Viewfinder (VF-P10)	Not provided with
Carrying case (CB-P410)	Not provided with



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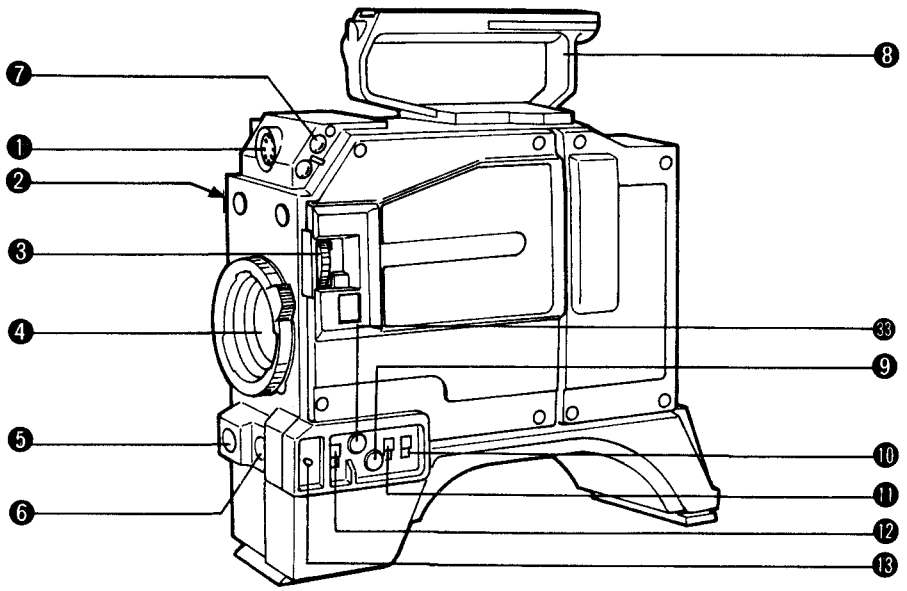
CONTROLS, CONNECTORS AND INDICATORS

* 1/120 for E version.
** 1/50 for E version.

Camera Head



❶ Viewfinder connector (VF)
Connector for a exclusive viewfinder (VF-P10).

❷ Lens connector (LENS)
Connect the cable from the standard lens.

❸ Filter turret
The turret for the Neutral Density and color temperature conversion filters is provided with four positions.
1) CLOSE: Same condition as lens being capped.
2) 3200K: For shooting indoors or outdoors with insufficient light.
3) 5600K: For shooting outdoors.
4) 5600K ND: The 25 % ND filter and 5600K color filter are combined for shooting outdoors on a fine day.

❹ Lens mount ring

❺ Auto setup button (AUTO SETUP)
Press this button to adjust the setup (black/white balance) or the white balance automatically and save the state in memory. When the button is pressed once, the white balance is adjusted; when depressed continuously for longer than one second, the setup is adjusted.
Before pressing this button, set white balance mode switch ❿ to the AUTO 1 or AUTO 2 (whichever you want to save) position.

❻ Video recorder start switch (VTR)
For start/stop triggering of the VTR.

❼ Shutter speed select button and indicator lamp (SHUTTER)
This button permits speed selection of the electronic shutter. This is effective when shooting fast-moving subjects.

SHUTTER
- SELECT
  Every time this button is pressed, the shutter speed will change to *1/100, 1/250, 1/500, 1/1000 and 1/2000 in this order (cyclic operation). At this time, the indicator lamp comes on.
- NORMAL
  If this button is pressed, the shutter speed will become **1/60. Normally use in this state. The indicator lamp goes out.

❽ Carrying handle (KA-231)

❾ Display select button (DISP SELECT)
This camera has a function to display the setting conditions of various control switches and settings in the viewfinder screen. There are two display screens; every time this button is pressed, the display will change from "no indication" to "screen 1" to "screen 2" sequentially.

❿ White balance mode switch (W BAL)
This switch permits mode selection of white balance.
AUTO 1 and AUTO 2: Set to either position when activating the auto setup or auto white balance function. This camera has two auto white memory circuits and this switch serves as its select switch.
PRESET: For using in the preset (3200K) state or 5600K with change of filter wheel.

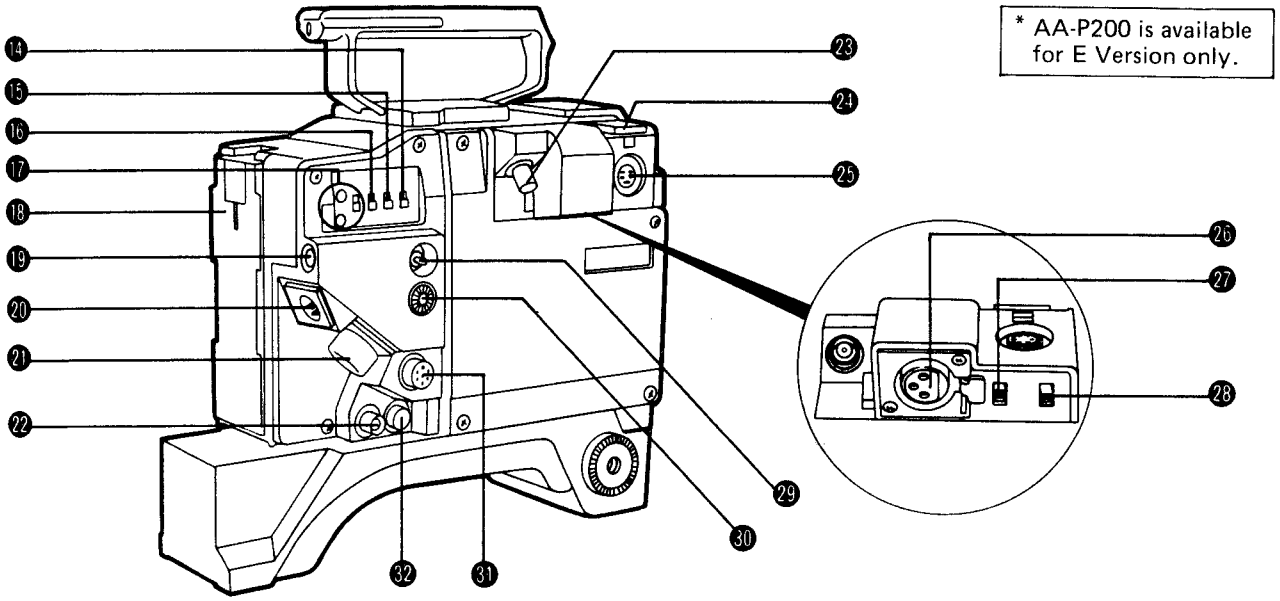
⓫ Camera/color bar select switch (MODE)
CAM: Outputs the video signal from the camera to the video output.
BARS: Outputs the color bar signal to the video output.
NEGA: Outputs the negative video signal from the camera to the video output.

⓬ Sensitivity select switch (HI-SENS)
For use in low light conditions, the camera sensitivity gain can be boosted by +9 dB or +18 dB. Normal operation is "0 dB".

⓭ Operation switch (CAMERA/VTR)
3-step select switch. Selects "ON", "OFF" of the camera power and VTR power-save mode*.
* This may not be possible with some VTRs.

⓮ Camera cable select switch (MODE)
Select according to the application of camera cable connector ㉑
VTR: Set to this position when connecting to a portable VTR with a composite signal input or component signal input (Y, R-Y, B-Y).
Y/C 358: (Y/C 443) Set to this position when connecting to a VTR with separate Y/C signal inputs (S-VHS recorder).
RM: Set to this position when connecting an optional remote control unit (RM-P200/RM-P300).

⓯ VTR triggering mode select switch (VTR)
Set according to the start/stop triggering mode of the VTR connected.



* AA-P200 is available for E Version only.

Switch position	VTR connector	VTR trigger	VTR connected
L	10-pin	Ground start	VHS*
H	10-pin	4 V start	
B	14-pin	4 V start	S-VHS, U-standard, MII, Betacam

* Some of VTRs start with the switch set to "H" position (H or L depends on the manufacturer). Confirm this beforehand.

⑯ Mic output level select switch (AUDIO LEVEL)
Selects the microphone (audio) output level through camera cable connector ㉑
H: Outputs at an approximate level of −20 dB.
L: Outputs at microphone's own level.

⑰ Phase adjustment control (PHASE)
Adjusts the phase of the video signal output from the camera with respect to the external reference signal when genlocking to other video sources.
H: For adjustment of H phase.
SC: Coarse; For coarse adjustment of SC phase in three steps, 0°−120°−240°.
Fine: For fine, continuous adjustment of SC phase.

⑱ Battery Guide
Guide for battery pack (DC-C11, optional). This is also used as a holder when the AC power adapter*AA-P200 (optional) or battery holder BH-P20 (optional, for the exclusive battery NB-G1) is used.

⑲ Earphone jack (EARPHONE)
When the video recorder used has a return audio signal line, this jack makes it possible to monitor the audio signal during recording or playback.

⑳ DC 12 V IN connector (DC INPUT)
Use this 4-pin Cannon XLR connector for supplying 12 V DC from the optional AA-P250 or *AA-P200 AC power adapter.

Pin No.	Function
1	GND
2	
3	
4	+12 V

㉑ Camera cable connector (VTR/RM)
Connector for connecting the cable from the recorder, etc. selected by switch ⑬ .

㉒ GENLOCK signal input connector (GENLOCK IN)
Input connector for a composite video or black burst external reference signal. This allows synchronization with other video devices.

㉓ Test output connector (TEST OUTPUT)
The signal selected by the internal "PIX SELECT" switch is output here. Either composite video signal (VBS), or B, G, R signals can be selected as an output. This is factory-preset to the composite video signal (VBS) output.

㉔ Exclusive microphone mounting shoe
Shoe for mounting the exclusive microphone M-K50 (monaural type) or MV-P602 (stereo type).

㉕ Exclusive microphone input socket (MIC)
Input socket for the exclusive microphone M-K50.

㉖ Mic input socket (MIC INPUT)
Input socket for the microphone with a 3-pin XLR connector. The input is parallel with MIC connector ㉕ .

㉗ Mic output select switch
This switch must be set to "MONO" position.

㉘ VF AUX video select switch
When the VTR is set to the playback mode with the 14-pin type VTR connected to camera cable connector ㉑ , if this switch is set to ON, the playback picture can be monitored in the viewfinder. This serves the same function as the RET switch on the lens.

㉙ Power select switch (POWER)
Permits power on/off and selection of power supplies.
RM/VTR: Set to this position when power is fed from the remote control unit (RM-P200/RM-P300, optional) or portable VTR through the camera cable.
OFF: The power to the camera will be completely set to OFF.
DC INPUT/BATTERY: Set to this position when the AC power adapter (*AA-P200 or AA-P250, optional)/4-pin XLR or the battery pack (DC-C11 or NB-G1, optional) is used.

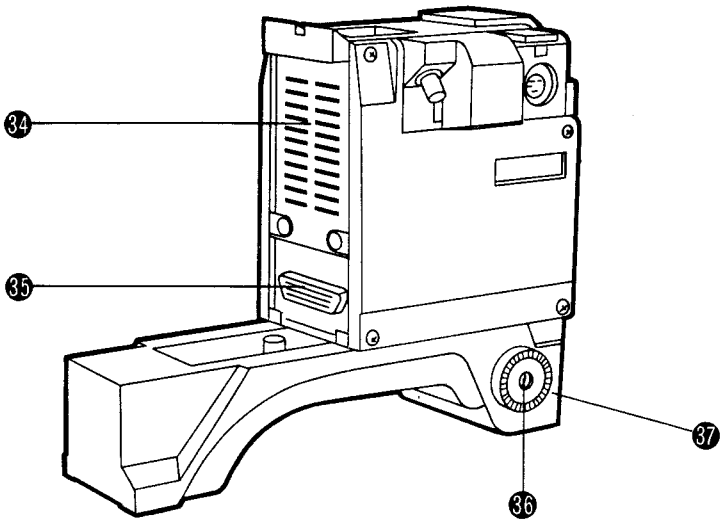
㉚ Intercom level (INTERCOM LEVEL)
Can control the volume level of the camera's intercom headphone.

㉛ Y/C358 (U version), Y/C443 (E version)
Y/C signals are output when camera cable select switch ⑭ is set to "Y/C358(443)". A unit with a 7-pin connector input (S-VHS VTR, etc) can be connected here.

㉜ Intercom jack (INTERCOM)

㉝ Zebra button (ZEBRA)
Switches the zebra pattern video level indicator on the viewfinder ON/OFF.

Rear of Camera Head



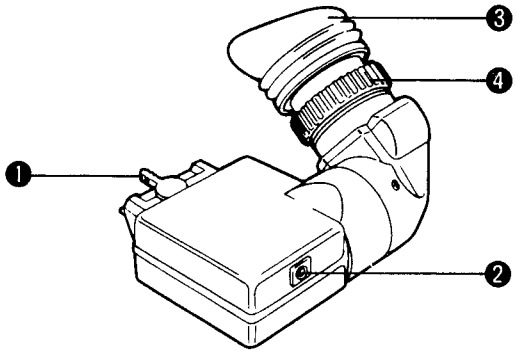
34 VTR mount
This camera is S-VHS VTR compatible. At present the VTR to be used is the JVC BR-S411 which is sold separately.

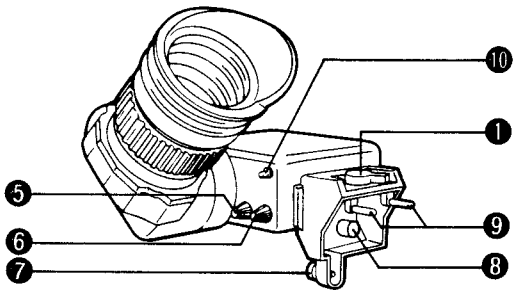
35 VTR connector (50 pins)
Connect the 50-pin connector of the BR-S411 S-VHS VTR.

36 Chest rest fit
To fit the chest rest KA-111

37 Shoulder pad KA-220

Viewfinder (VF-P10, optional)





1 Slide lock lever
After the viewfinder has been attached to the camera, the viewfinder can be slid to the left and right (by 40 mm) if this lever is loosened.

2 Tally lamp
This LED comes on to indicate the recording mode. To switch it off, set switch ⑩ to OFF.

3 Eyepiece
Focusing adjustment is possible.

4 Eyepiece fixing ring
Loosen and adjust the eyepiece back and forth to match you vision.

5 Contrast control (CONT)

6 Brightness control (BRIGHT)

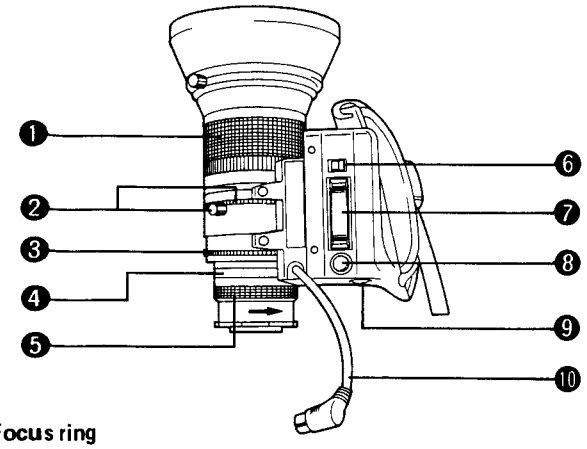
7 Lock screw
Use to lock the viewfinder onto the camera.

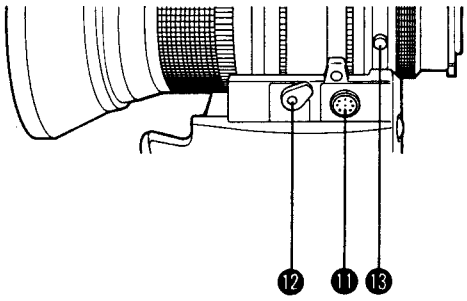
8 VF connector
Directly connected to this camera.

9 Viewfinder fixing pins
Insertion pins for use in attaching to this camera.

10 Tally switch (TALLY)
Turns the top tally lamp ② off even when the camera (VTR) is recording. The REC indicator inside the viewfinder will be kept ON.

Zoom Lens (HZ-713, optional)





❶ **Focus ring**
Focus adjustment ring.

❷ **Zoom lever/zoom ring**
Ring and lever for manual zooming.

❸ **Iris ring**
When the iris mode switch ❻ is set to "MANU", the iris can be opened and closed manually using this ring. When it is set to "AUTO", the iris is adjusted automatically.

❹ **Back focus ring**
For the back focus adjustment, turn this ring.

❺ **Macro ring**
If the ring is turned fully in the direction of the arrow, macro shooting at a distance of about 3.5 cm from the subject will be possible.

❻ **Iris mode switch**
AUTO: For auto iris operation
MANU: For manual iris operation
*Set to "AUTO" position when the optional remote control unit RM-P200/RM-P300 is used.

❼ **Zoom servo lever**
The speed and direction of the servo zooming is controlled by this see-saw switch.

❽ **Return switch (RET)**
The return video signal from the VTR can be monitored in the viewfinder while this switch is depressed.

❾ **VTR switch (VTR)**
For the start/stop operation of the VTR.

❿ **Lens cable**
Connect the lens connector on the camera head.

⓫ **Zoom servo connector**
For connecting the optional zoom servo unit.

⓬ **Zoom mode knob (ZOOM)**
S: For power zooming
M: For manual zooming

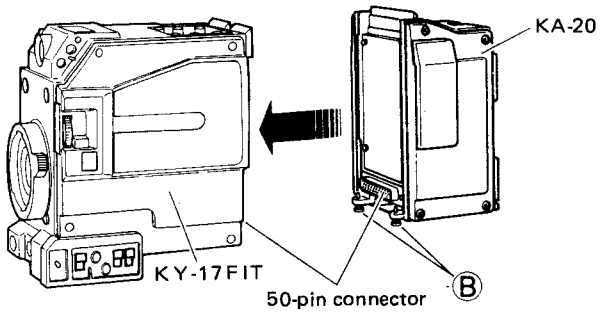
⓭ **Back focus securing knob**
For fixing back focus ring ❹.

INSTALLATION

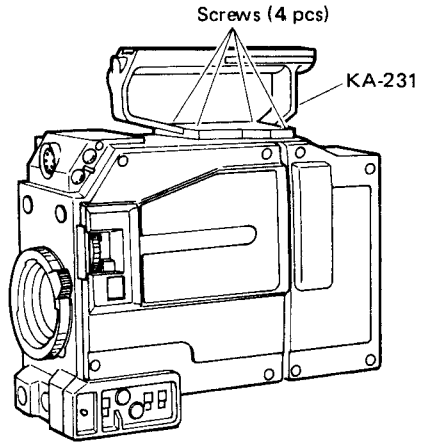
Installation of Camera Adapter (KA-20, optional) and Shoulder Pad (KA-220)

- KA-20 is a Camera Adapter designed for exclusive use of this camera.
- To fit the Camera Adapter KA-20 to this camera, the carrying handle KA-231 is necessary.

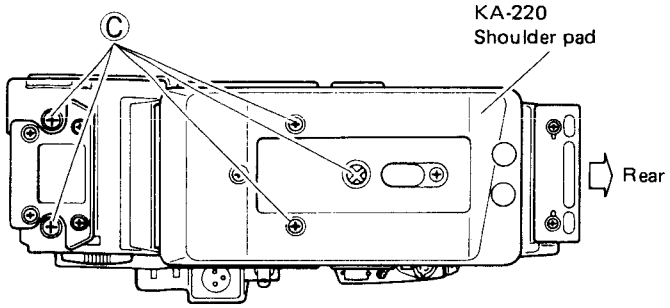
1 Attach the KA-20 to the camera's rear side by connecting the 50-pin connectors correctly.
Turn two screws Ⓑ clockwise with a Phillips type (+) screwdriver to secure the KA-20.



2 Attach the carrying handle KA-231 to the top of the camera head with four screws provided with the KA-231. (See the figure below.)



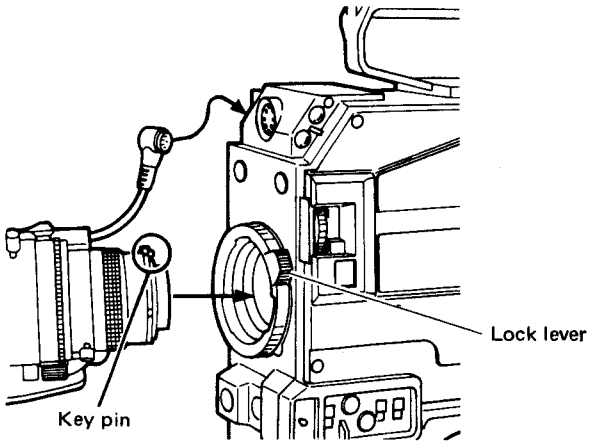
3 Attach the Shoulder Pad KA-220 to the camera head referring to the following figure (viewed from the shoulder pad). Turn five screws Ⓒ clockwise with a Phillips type screwdriver to secure the shoulder pad.



Note: To join the camera head with the BR-S411 S-VHS VTR, refer to page 20.

Lens Installation (HZ-713, optional)

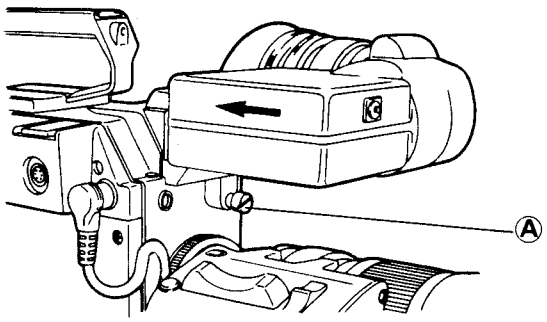
1 Be careful of the key pin of the lens and slot of the mount ring groove, then insert the lens flange into the mount groove firmly.
2 Turn the lock lever clockwise to fix the lens.
3 Connect the lens cable to the camera head.



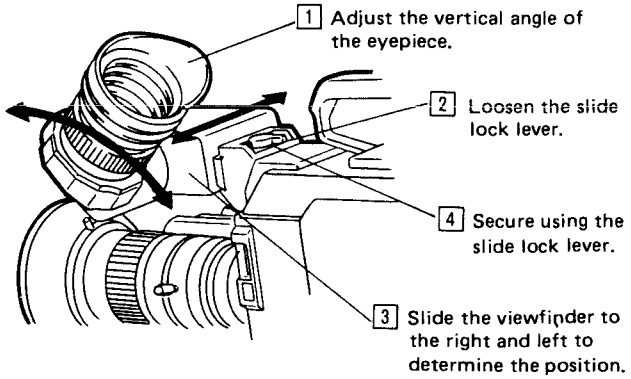
Note:
Make sure that the lens is firmly attached. Otherwise, the back focus adjustment may be incorrect.

Viewfinder Installation (VF-P10, optional)

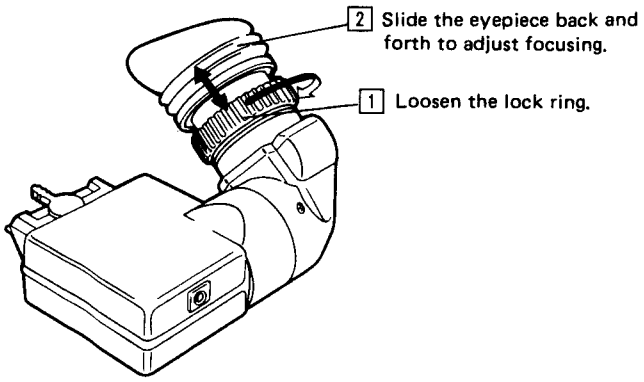
1 Mate the viewfinder fixing pin with the mounting hole of the camera head, then insert.
2 Insert it all the way, then confirm that the viewfinder has been positively connected and turn viewfinder fixing screw Ⓐ clockwise to lock it.



- **Eyepiece adjustment**
  - Vertical angle and left/right slide adjustment


1 Adjust the vertical angle of the eyepiece.
2 Loosen the slide lock lever.
4 Secure using the slide lock lever.
3 Slide the viewfinder to the right and left to determine the position.

• Focusing adjustment

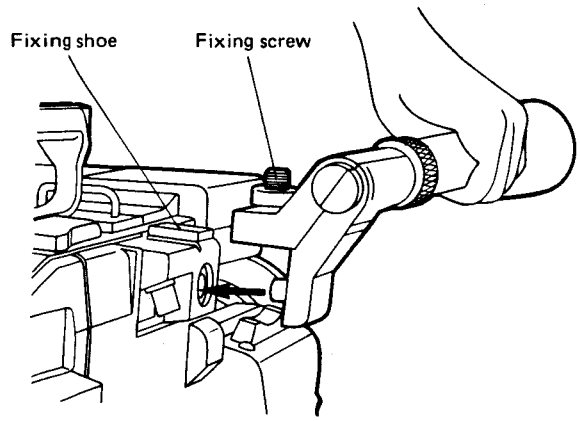


Microphone Installation

Exclusive microphone (M-K50 or MV-P602, optional)

1 Insert the microphone into the mic holder fixing shoe on the right top of the camera.

2 Secure the microphone using the fixing screw.



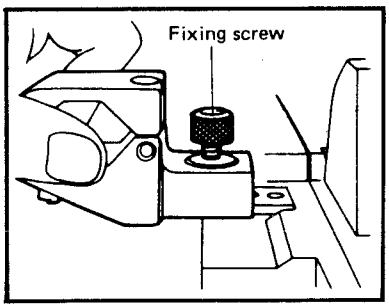
Note:

• Lens motor noise or mechanical friction noise may be picked up by the microphone and recorded. Check possible noise conditions in advance.

Ordinary microphone

Install the microphone onto the camera head using the optional mic holder (Part No. SCUA30312, service parts).

1 Insert the mic holder into the mic holder fixing shoe on the right top of the camera, then fix it using the fixing screw.



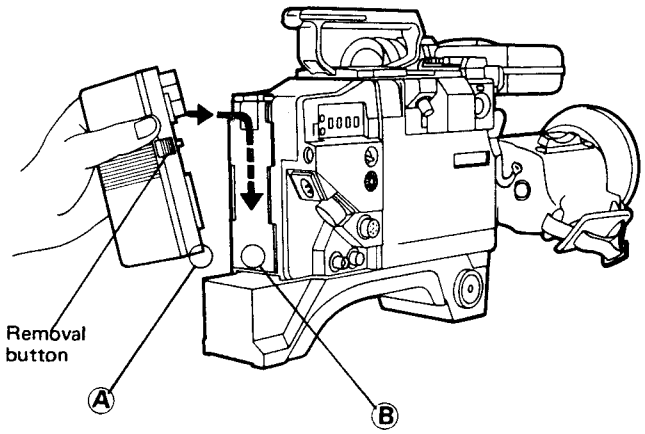
2 Connect the microphone output to the MIC connector on the camera head.

Battery Pack (DC-C11, optional) Installation

1 Press battery pack guide Ⓐ onto Ⓑ on the battery guide, then press it firmly to the camera using Ⓑ as the reference. Match the battery pack guide with the battery guide, then press it down until it is locked.

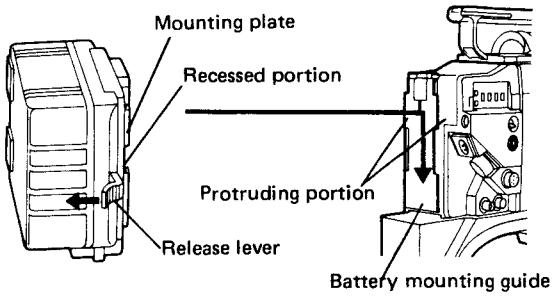
2 To remove the battery pack, slide the removal button towards you, then move the battery pack upward.

• **Battery pack**
  • With a fully-charged DC-C11 battery pack, the camera will operate for approx. 70 minutes at normal temperatures (about 25°C (77°F)).
  • Be sure to charge the battery pack before recording. It is also recommended to have some spare charged battery packs ready.
  • Replace the battery pack when the BATT indicator in the viewfinder starts flickering.
  • Use the optional AA-P250 AC power adapter to charge the battery pack. For the charging procedure, refer to the AA-P250's instruction manual.



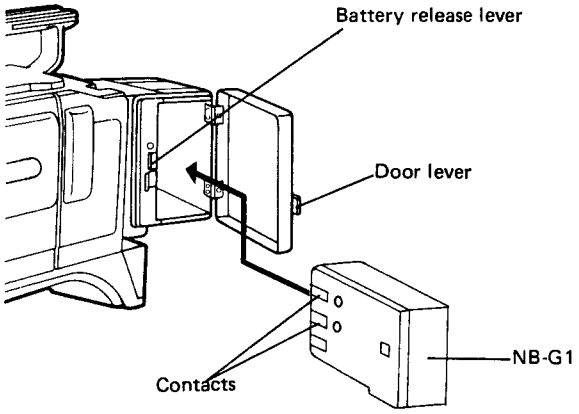
Battery Holder (BH-P20, optional) Installation

1. Align the recessed portion of the mounting plate of the BH-P20 with the protruding protion of the battery mounting guide on the back of the camera. Push the BH-P20 down until it locks.
2. To remove the BH-P20, push the release lever, and slide the BH-P20 up.



Inserting the NB-G1 battery pack (optional)

1. Open the compartment door by pushing the door lever away from the BH-P20.
2. Insert the NB-G1 battery pack with its contacts facing the camera, as illustrated.
   When properly inserted, the battery pack will automatically be locked by the battery release lever.
   - To remove the battery pack, push the battery release lever away from the BH-P20; the battery pack will be unlocked so it can be removed.



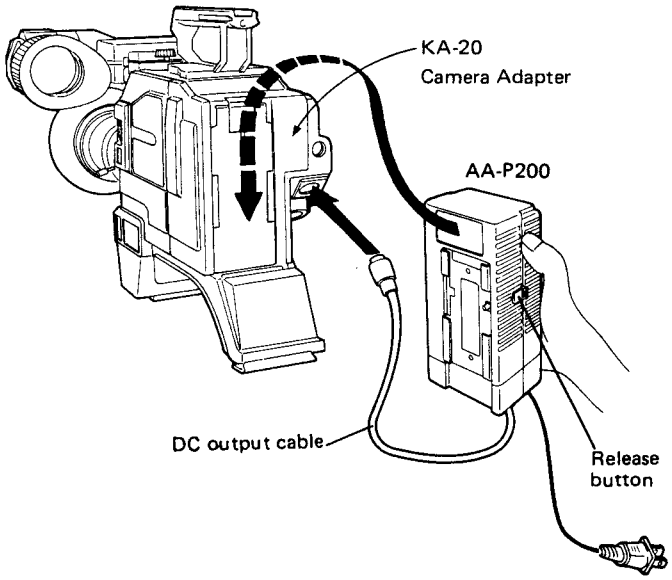
AC Power Adapter AA-P200 (optional) Installation

(U version only)

This describes mounting method of the AC power adapter AA-P200 which can be directly mounted onto this camera.

1. As shown, insert the power adapter into the battery quide on the back of the camera head from above, then press it down.
2. Connect the AA-P200 DC output cable to the DC IN connector on the camera head.

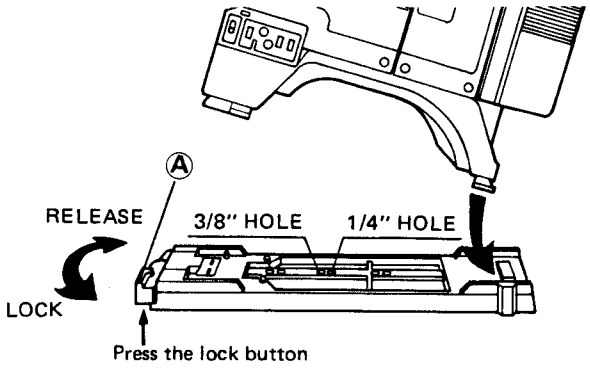
- To remove the power adapter, pull it upward while pressing the release button.



Tripod Installation

When the shoulder pad (KA-220) is fitted, use the tripod base KA-500X.

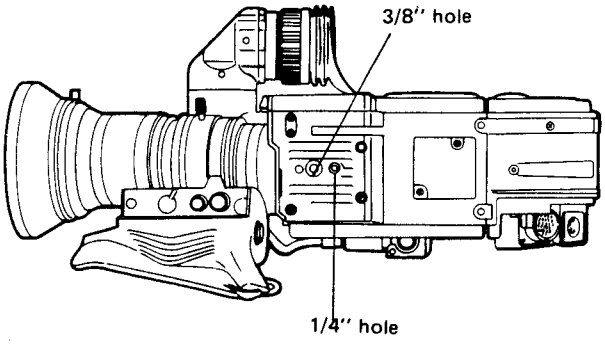
1. Use either the 1/4" or 3/8" holes to match the tripod used, select the front, middle or rear holes of the camera for maximum balance, and taking its center of gravity into consideration.
2. While pressing the lock button, set lock lever Ⓐ to its released position (turn it clockwise).
3. After engaging the notch on the rear of the camera with that of the tripod base, place the camera on the tripod base.
4. While pressing the lock button, set lock lever Ⓐ to its locked position by turning it to secure the camera.



Caution:
When rotating the lock lever, turn it while holding the camera's handle with one hand. Turn the lever slowly to prevent the camera from dropping off the tripod.

In the case the shoulder pad (KA-220) is not used (KA-500X cannot be utilized)

As shown on the right, the 1/4" and 3/8" holes are provided on the bottom of this camera. Use these in accordance with the tripod used.



POWER SOURCES (AA-P200 is available for U version only.)

There are four methods of powering this camera as described below.

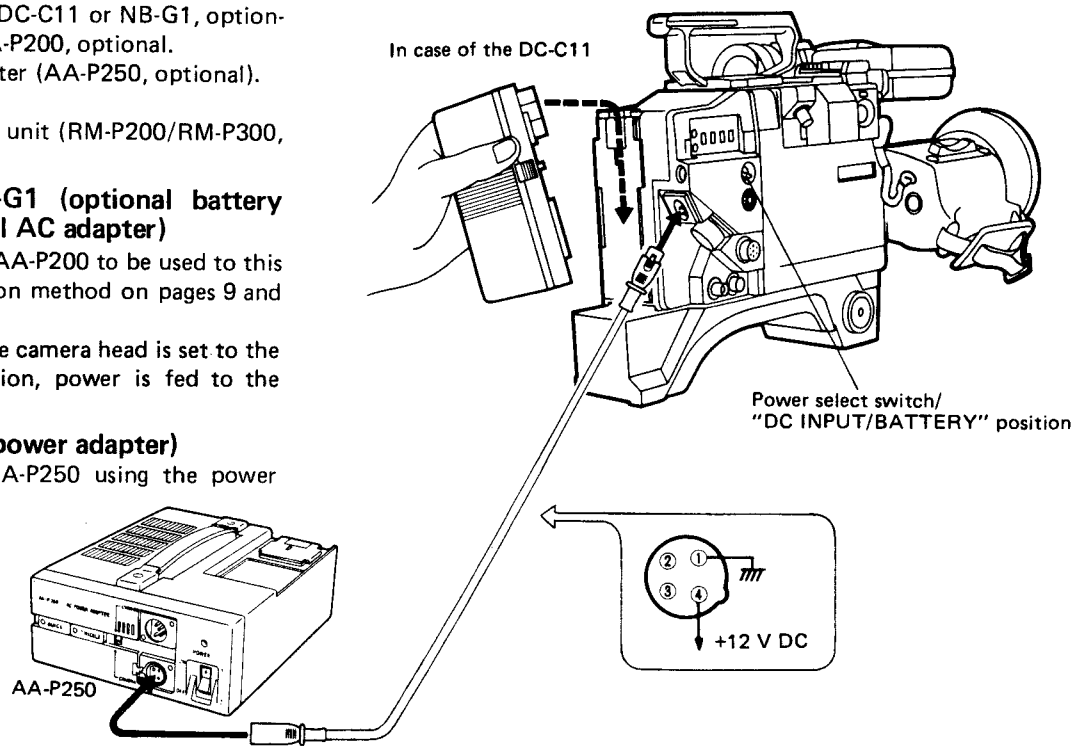
(1) Power from the battery pack (DC-C11 or NB-G1, optional) or the AC power adapter AA-P200, optional.
(2) Power from the AC power adapter (AA-P250, optional).
(3) Power from a portable VTR.
(4) Power from the remote control unit (RM-P200/RM-P300, optional).

Power from the DC-C11/NB-G1 (optional battery pack) or the AA-P200 (optional AC adapter)

1. Install the DC-C11, NB-G1 or AA-P200 to be used to this camera. (Refer to the installation method on pages 9 and 10.)
2. If the power select switch on the camera head is set to the "DC INPUT/BATTERY" position, power is fed to the camera head.

Power from the AA-P250 (AC power adapter)

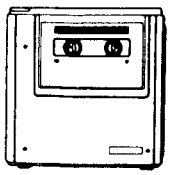
1. Connect this camera to the AA-P250 using the power cable supplied with the adapter.
2. If the power select switch on the camera head is set to the "DC INPUT / BATTERY" position, power is fed to the camera head.



Power from a portable VTR

1. Connect the camera to the VTR using a VTR cable which matches the VTR used. (Refer to page 12.)
2. When a VTR with a composite or component (Y, B-Y, R-Y) input is used, set the camera cable select switch on the camera head to the "VTR" position. When an S-VHS VTR is connected, set the switch to the "Y/C 358 (443)" position.
3. When the power select switch on the camera is set to the "RM/VTR" position, power is fed to the camera head.

Caution:
If the camera is operated from the battery in the portable VTR, the battery operation time could be very short due to the small capacity of the battery. The power supply to the camera should not exceed the rated current capacity of the VTR.

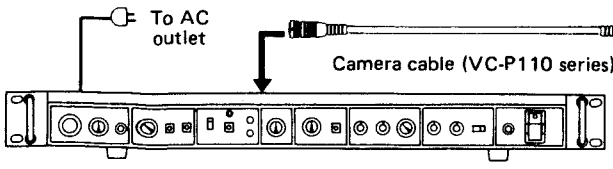

Portable VTR

VTR cable (optional)

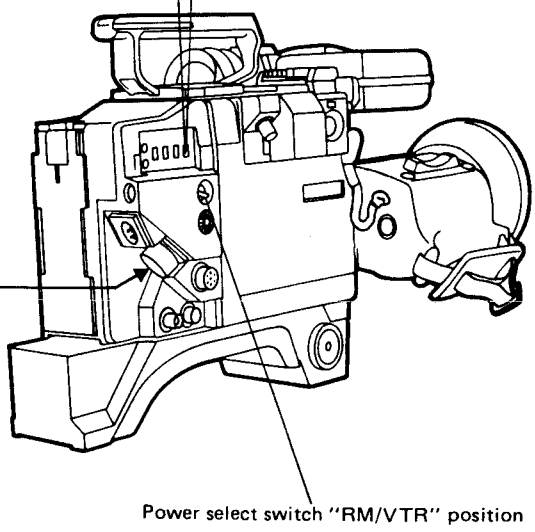
Camera cable select switch:
- Set to the "VTR" or "YC358" position for the correct VTR being used.
- Set to the "RM" position when power is fed from the RM-P200/RM-P300.

Power from the RM-P200/RM-P300 (optional remote control unit)

1. Using the remote control cable (VC-P110 series), connect the camera head to the RM-P200/RM-P300.
2. Set the camera cable select switch to the "RM" position.
3. When the power select switch on the camera is set to the "RM/VTR" position, power is fed to the camera head.



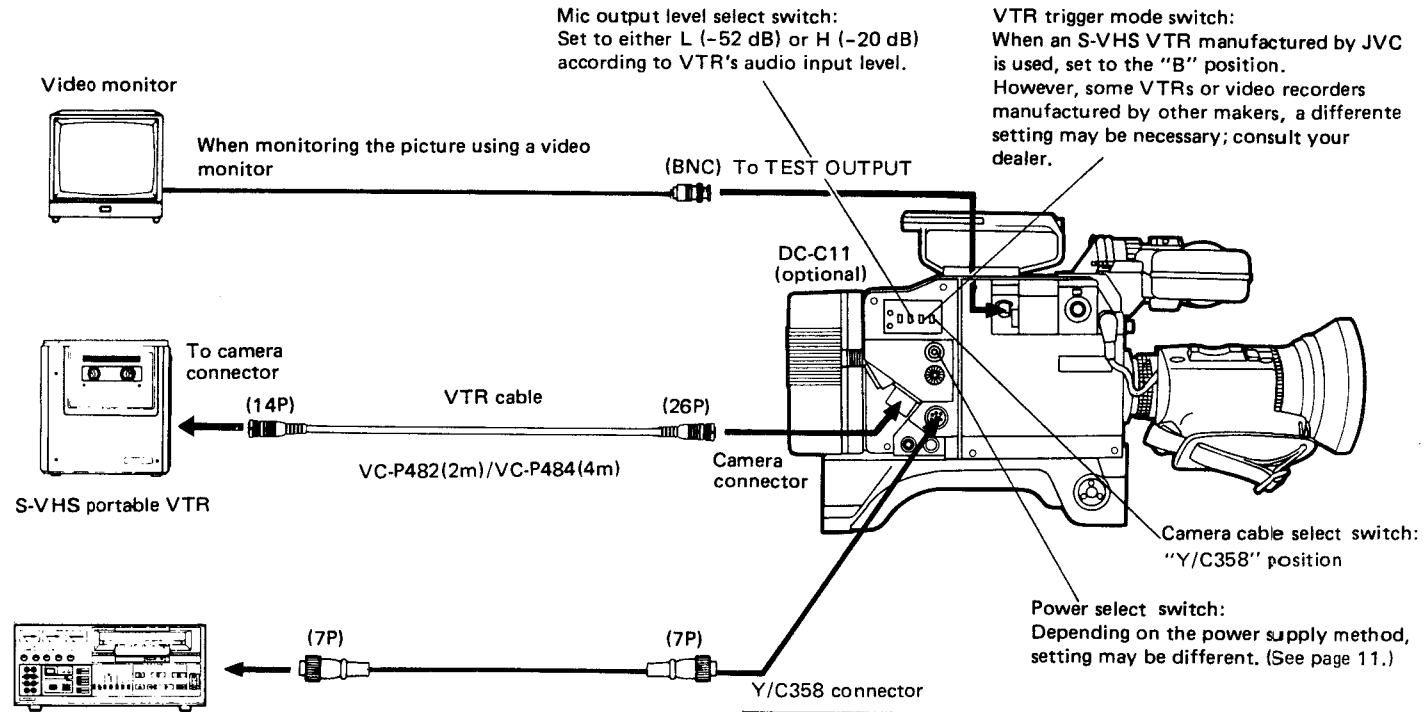
RM-P200



CONNECTION TO VIDEO RECORDER

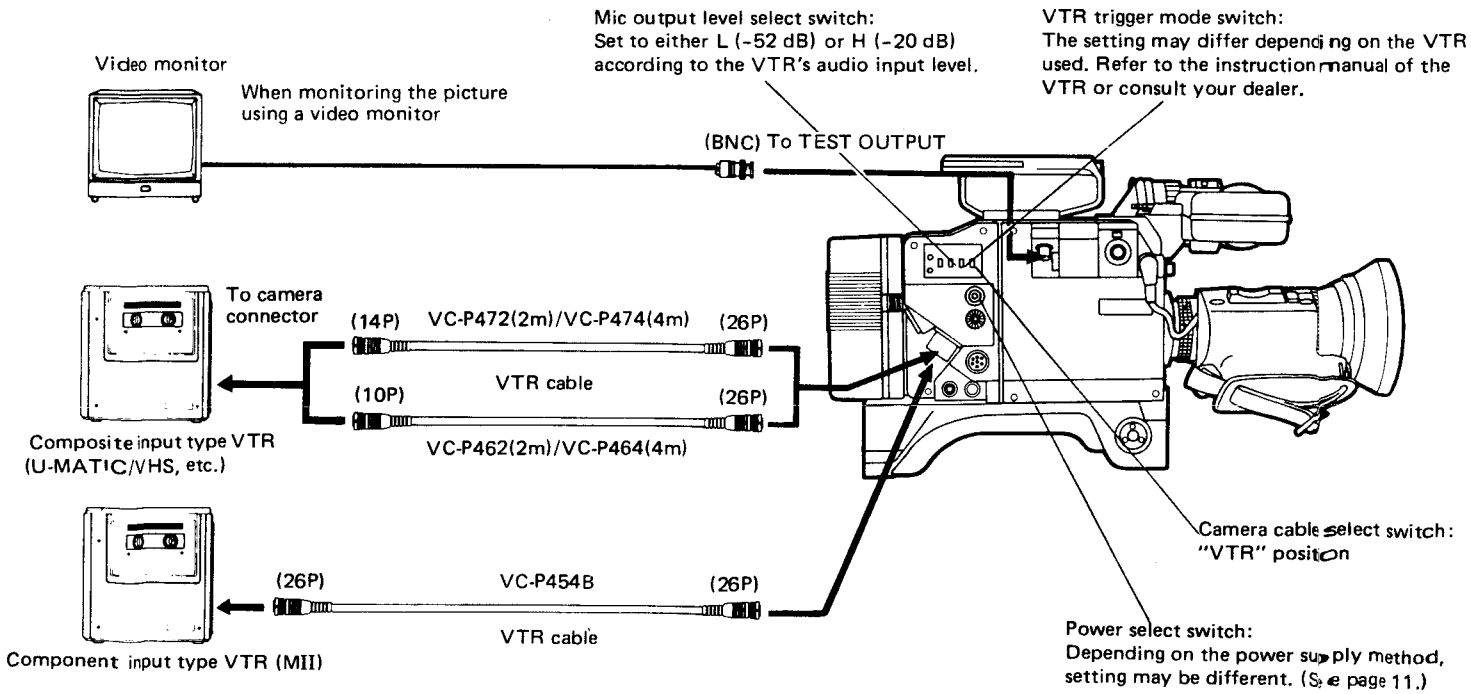
Before making connections, be sure that the power of the camera and units used is set to OFF.

• Connecting to a VTR with the Y/C inputs (S-VHS video recorder)


Mic output level select switch:
Set to either L (-52 dB) or H (-20 dB) according to VTR's audio input level.
VTR trigger mode switch:
When an S-VHS VTR manufactured by JVC is used, set to the "B" position.
However, some VTRs or video recorders manufactured by other makers, a differente setting may be necessary; consult your dealer.
Video monitor
When monitoring the picture using a video monitor
(BNC) To TEST OUTPUT
DC-C11 (optional)
To camera connector
(14P)
VTR cable
(26P)
VC-P482(2m)/VC-P484(4m)
Camera connector
S-VHS portable VTR
Camera cable select switch:
"Y/C358" position
Power select switch:
Depending on the power supply method, setting may be different. (See page 11.)
(7P)
(7P)
Y/C358 connector
S-VHS stationary VTR

Note: VC-P482/VC-P484
The VTR cable is exclusively for S-VHS recorders. Even if the number of connector pins of another cable is the same, there is no compatibility.

• Connecting to a VTR with the composite input (U-VCR/ VHS, etc.) or component input (MII)


Mic output level select switch:
Set to either L (-52 dB) or H (-20 dB) according to the VTR's audio input level.
VTR trigger mode switch:
The setting may differ depending on the VTR used. Refer to the instruction manual of the VTR or consult your dealer.
Video monitor
When monitoring the picture using a video monitor
(BNC) To TEST OUTPUT
To camera connector
(14P)
VC-P472(2m)/VC-P474(4m)
(26P)
(10P)
VTR cable
(26P)
Composite input type VTR (U-MATIC/VHS, etc.)
VC-P462(2m)/VC-P464(4m)
Camera cable select switch:
"VTR" position
(26P)
VC-P454B
(26P)
VTR cable
Power select switch:
Depending on the power supply method, setting may be different. (See page 11.)
Component input type VTR (MII)

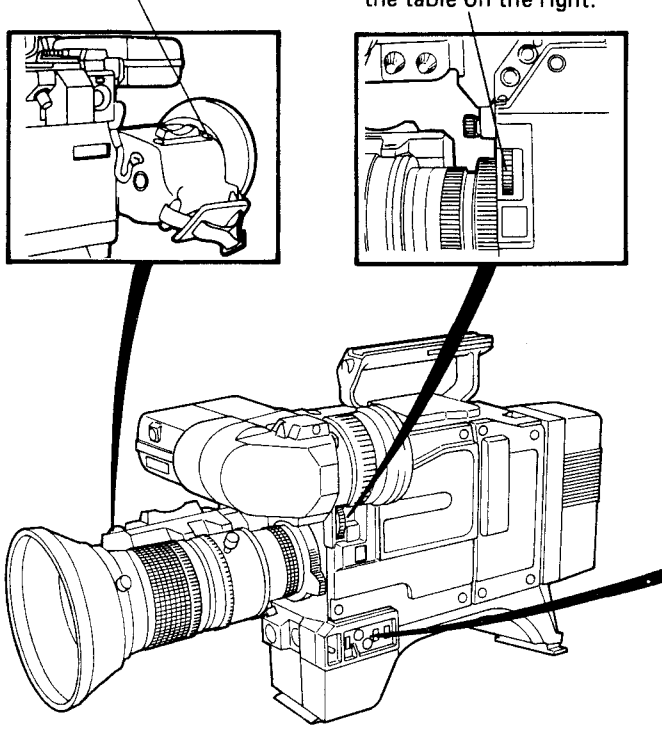
BEFORE SHOOTING

To record a clear picture with correct colors, it is necessary to adjust the back focus and auto setup.
Once the back focus is adjusted at the time of lens installation, subsequent adjustment is basically not necessary. However, with auto setup adjustment, be sure to adjust it in advance every time shooting is done. Prior to adjustment, connect the VTR, TV monitor, etc. in accordance with the prescribed connection methods, then set up camera switches and controls as shown below.

1. PREPARATION

1 Iris mode switch: AUTO

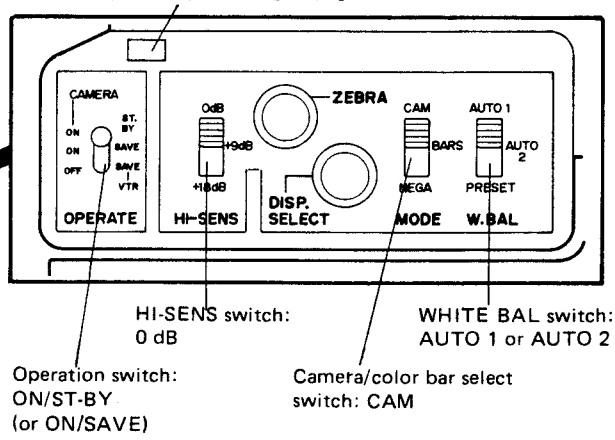
2 Filter disk: Set according to the table on the right.



Filter indication	Color temperature	Shooting conditions
1	CLOSE	When the camera is not used
2	3200K	Sunrise or sunset, studio lighting
3	5600K	Outdoors; cloudy or rainy weather
4	5600K + 25 % ND	Outdoors; bright or direct sun

3 Set the switches as shown below.

If the LED does not glow in red, no power is fed to the camera. Supply power by referring to page 9.



HI-SENS switch: 0 dB

WHITE BAL switch: AUTO 1 or AUTO 2

Operation switch: ON/ST-BY (or ON/SAVE)

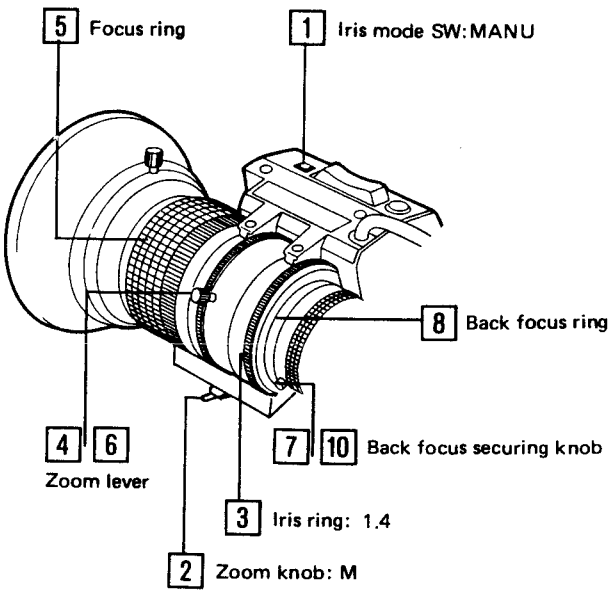
Camera/color bar select switch: CAM

Upon completion of setting, point the camera at an appropriate object, then operate the lens focus lever and zoom lever and monitor the picture in the viewfinder screen or monitor TV screen.

2. BACK FOCUS ADJUSTMENT (for HZ-713)

Perform this adjustment while observing the TV monitor or viewfinder.

1 Set the iris mode switch on the lens to the "MANU" position.
2 Set the zoom knob on the lens to the "M" position.
3 Set the iris ring to "f1.4" (open).
At this time, if the lighting is too strong, reduce lighting or move to a darker place.
4 Fully turn the zoom lever to the TELE position.
5 Bring into focus using the focus ring.
6 Fully turn the zoom lever to the WIDE-angle position.
7 Loosen the back focus securing knob.
8 Turn the back focus adjustment lever, then adjust it to a position where the focusing is best.
9 Perform fine-tuning by repeating steps 4 to 8 a few times.
10 Finally, tighten the back focus securing knob.

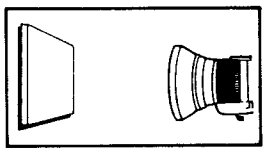


Note:
The back focus adjustment is more accurate when the distance between the subject (pattern) and camera is more than 3 m (10 ft.).

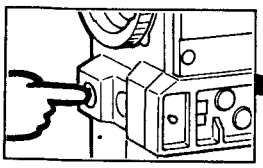
3. AUTO SETUP ADJUSTMENT (BLACK/WHITE BALANCE ADJUSTMENT)

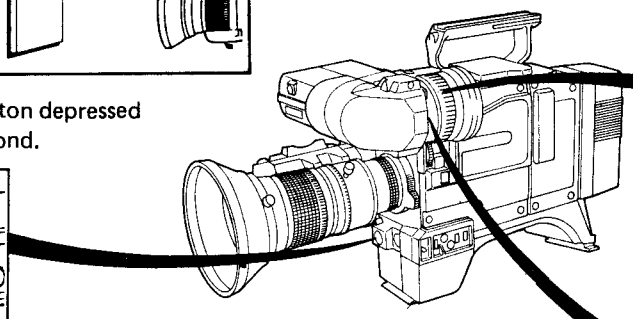
- Start adjustment following steps 1 to 3 (Refer to "1. PREPARATION") described previously.
- Auto setup will be performed in the order of black, white and black for adjustment of balance.

4 Shoot a white object (cloth, wall, etc) so as to fill the viewfinder screen.



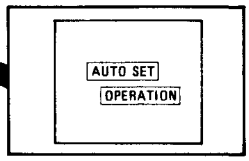
5 Hold the auto setup button depressed for longer than one second.



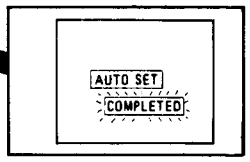


Note:
If the duration in which the auto setup button is being pressed is shorter than one second, only the white balance will be adjusted. Be sure to keep the button depressed for longer than one second for adjustment of the setup. For auto white balance, refer to page 15.

6 The auto setup operation will start, and the following indication will appear in the viewfinder screen.



7 Upon completion of the setup adjustment, "COMPLETED" will be indicated flashing for about 4 seconds in the viewfinder screen.

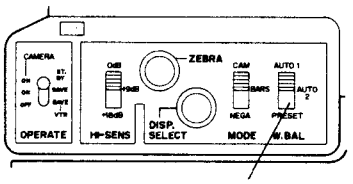


8 This completes the setup adjustment. The white balance state is automatically held in the built-in memory circuit.

NOTE

- **White balance memory**

This camera has two built-in white balance memory circuits and different color temperature states can be stored in the memory, individually.
If the above auto setup adjustment is performed with the W.BAL switch set to "AUTO 1". The white balance state will be held in memory "AUTO 1". Likewise, if it is done with the switch set to "AUTO 2", it will be held in memory "AUTO 2".



W.BAL switch

- **Display in the viewfinder**

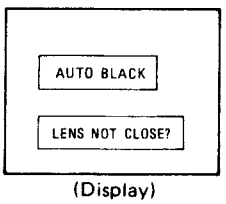
If the above auto setup adjustment has not been done correctly, the "COMPLETED" indication as described in 7 above will not appear in the viewfinder screen.
Instead, the following error message or more light message will appear.
If the error message appears, check for the following causes and items, then perform auto setup adjustment again.

Note:
- The error message and more light message will flicker in the screen for about 4 sec. as will in the "COMPLETED" indication, after 4 sec. if goes out. Pay attention to the contents of th indication.

- **Error message during auto black balance**

LENS NOT CLOSE?

Cause: The lens does not perform auto operation.
Remedy: Check for lens cable connection.

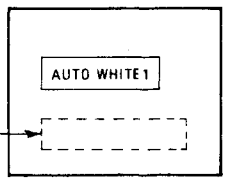


(Display)

- **Error message during auto white balance (including the more light message)**

(The display shows an example in which the W.BAL switch is set to "AUTO 1".)

Error message or more light message (Display)



- **Error messages**

LOW LIGHT ERROR

Cause: Insufficient amount of light.
Remedy: Increase lighting or sensitivity using the HI-SENS switch. (If the sensitivity is increased, the S/N ratio will deteriorate.)

OBJECT ERROR?

Cause: The subject shot is not suitable.
Remedy: Check if the subject is a white object and change the subject if necessary.

OVER LIGHT ERROR

Cause: The incident light is too strong. The color temperature filter is not suitable.
Remedy: 1. Check to see if strong light such as sunlight or its reflection from the subject is directly introduced to the video camera.
2. Set the filter to the correct position.

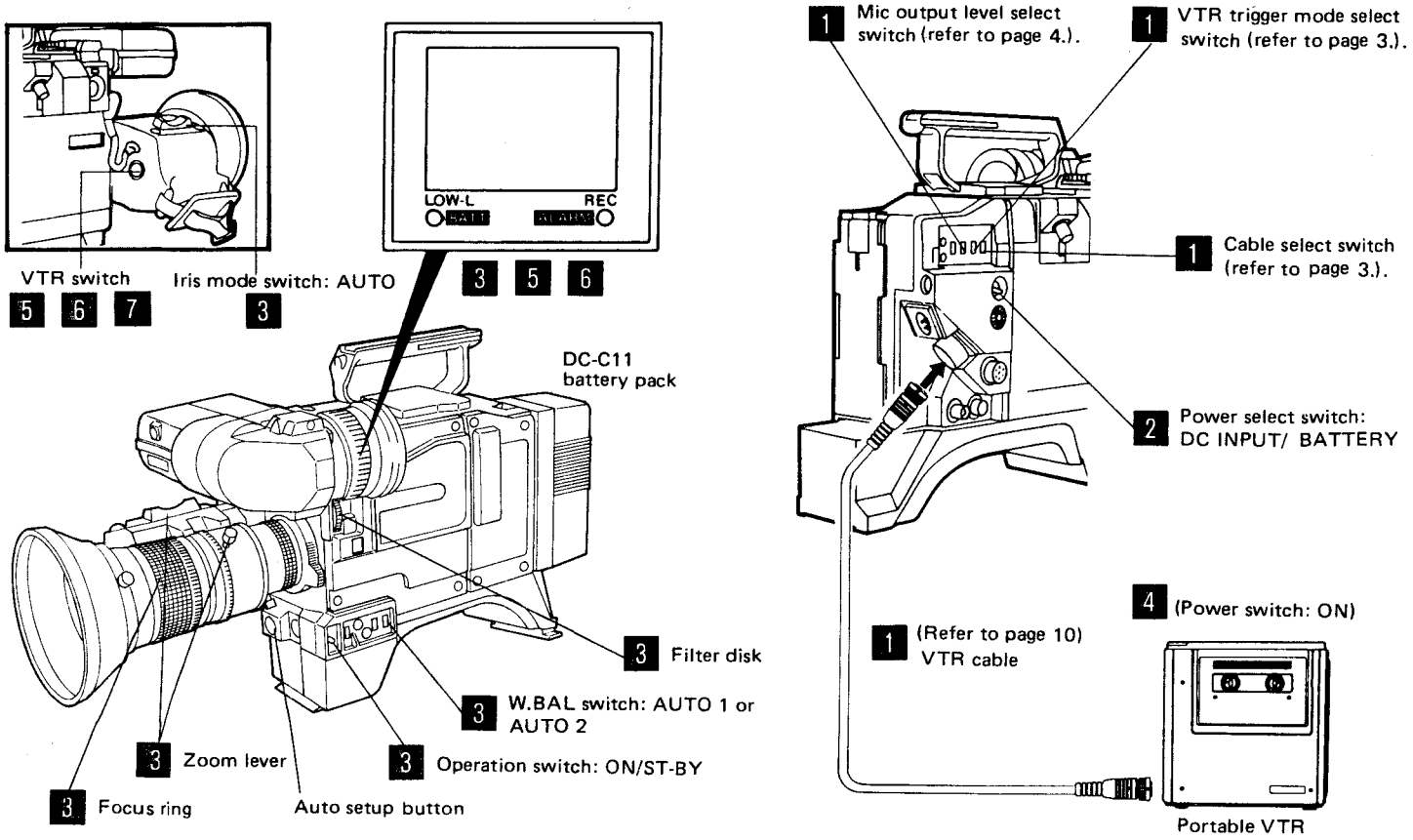
- **More light message**

MORE LIGHT

This message is somewhat different from an error message. The "MORE LIGHT" indication appears when the amount of light is insufficient, indicating that the white balance has been automatically adjusted to a level detrimental to shooting. Although this situation may not be wrong; it is recommended that the amount of light be increased.

OPERATION

Recording using a portable VTR (When the DC-C11 is used)


LOW-L
REC
VTR switch
5 6 7
Iris mode switch: AUTO
3
3 5 6
DC-C11
battery pack
3 Filter disk
3 W.BAL switch: AUTO 1 or AUTO 2
3 Zoom lever
3 Operation switch: ON/ST-BY
3 Focus ring
Auto setup button
1 Mic output level select switch (refer to page 4.).
1 VTR trigger mode select switch (refer to page 3.).
1 Cable select switch (refer to page 3.).
2 Power select switch: DC INPUT/ BATTERY
4 (Power switch: ON)
1 (Refer to page 10) VTR cable
Portable VTR

Preparation for recording

(The following steps, numbered 1 through 7, correspond to the numbers in the illustrations above, showing controls and switches to be operated in respective steps.)

1 Connect the portable VTR following the connection method given on page 12.

2 Supply power to the camera following the power supply method given on page 11.

> **Note:**
> When the BATT indicator or "BATT EMPTY?" display in the viewfinder flickers, the battery pack is nearly exhausted; replace with a fully-charged battery pack.

3 Perform auto setup adjustment following "Before shooting" on page 14.

4 Set the VTR to the recording mode.
For the operation of the VTR, refer to the instruction manual of the VTR.

5 When the tape in the VTR starts moving, press the VTR switch on the lens.
The VTR enters the recording pause mode.
This completes the preparation.

Recording

6 When the VTR switch on the lens is pressed, recording will commence. At this time, the REC lamp in the viewfinder comes on.

7 To stop recording, press the VTR switch again.
The VTR stops in the recording pause mode. The REC lamp goes out.

Power-save function of the VTR

If a 14-pin VTR (example: CR-4900) with a power save circuit is used, the power of the VTR can be saved during the interval from the recording pause to the restart of recording.
Operate as in the following:

[1] Upon completion of the preparation for recording, set the operation switch to the "ON/SAVE" position.
The Upper Drum of the VTR will be switched off in the recording pause mode.

[2] To start recording, set the operation switch to the "ON/SAVE" position.
The Upper Drum of the VTR will be switched on and the VTR enters the recording pause mode.

[3] When the VTR switch on the lens is pressed, recording will start.

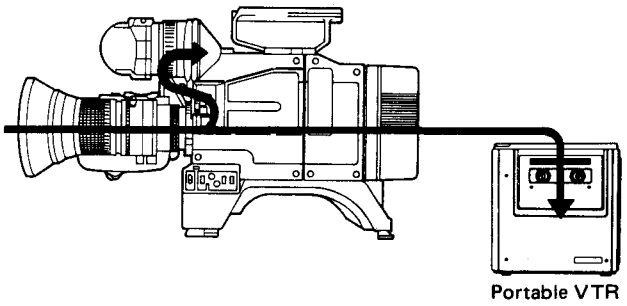
White balance adjustment

If the camera is moved from indoors to outdoors or vice versa, the type of light source changes. This requires readjustment of white balance.
White balance can be adjusted by following the same procedure as described in "AUTO SETUP ADJUSTMENT" on page 14, but the way the auto setup button is pressed differs.
For adjustment of white balance, press the auto setup button once and release it immediately. Be careful not to keep it depressed, otherwise the auto setup adjustment mode will be engaged.
The display in the viewfinder shows [AUTO WHITE], instead of [AUTO SET]. The rest is the same as for auto setup adjustment.

Monitoring the picture

When the camera is connected with a portable VTR using the VTR cable, the picture can be monitored in the viewfinder.

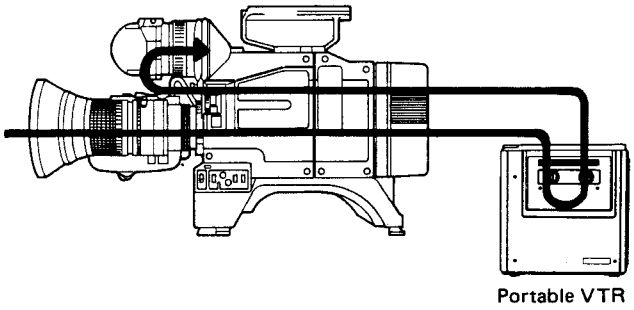
Monitoring the picture from the camera



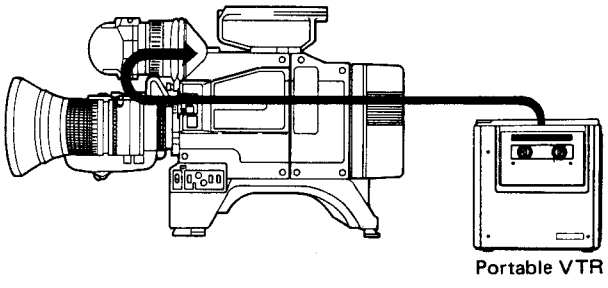
Monitoring the E-E mode picture from the VTR

While the return button (RET) on the lens is held depressed, or when the VF AUX video switch on the portion of the camera where the microphone is mounted is set to the "AUX" position, the return video signal can be monitored.

However, unless the VTR used has a return video signal function this is not possible. (This is impossible with a 10-pin type VTR.)



Monitoring the VTR playback picture



- For the playback operation of the VTR refer to its instruction manual.

Contour (contour compensation) ON/OFF switch

To provide a sharper image, this camera has a built-in 2H contour compensation circuit for both vertical and horizontal signals. This circuit is factory-preset to ON.

The position of the contour switch can be confirmed in the character display. For details, refer to the character display description on page 17.

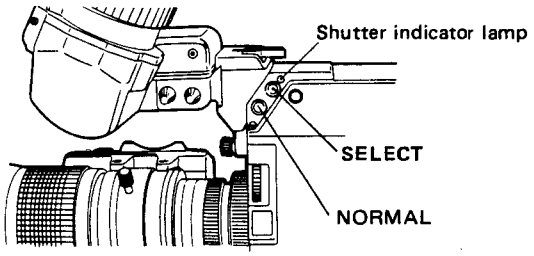
To switch off the contour compensation, remove the side cover on the right of the camera, set the CONTOUR switch on the internal CP board to "OFF". For detailed operation, consult your dealer.

Electronic shutter

This function goes a long way when analyzing the motion of a fast moving object, etc. The position can be changed in 5 steps:*1/100, 1/250, 1/500, 1/1000 and 1/2000, in addition to the normal **1/60 sec.

As the shutter speed is made faster to*1/100, 1/250, 1/500, 1/1000 and 1/2000, the senditivity will drop; therefore, shooting at a dark place is not possible. For selection, use the shutter speed select buttons (two buttons) on the top of the filter turret to the right side of the camera.

When the power of the camera is switched "ON",**1/60 sec is selected as an initial setting. At this time, the shutter indicator lamp shown below does not light.



- **Selecting the shutter speed**

To change the shutter speed, press the upper button (SELECT) of the two buttons.

The shutter speed will sequentially change from *1/100 to 1/250, from 1/250 to 1/500, to 1/1000, and to 1/2000 every time this button is pressed and cycle in a loop. At this time, the shutter indicator lamp will come on. To set to the normal **1/60 sec, press the lower button (NORMAL) of the two.

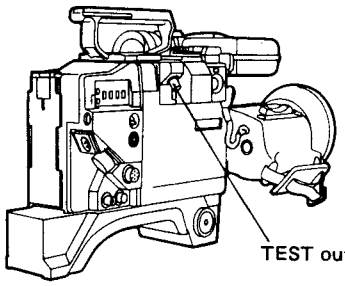
The shutter speed setting can be confirmed by observing the viewfinder screen using the character display function of this camera.

For the display indication, refer to the character display indication on page 17.

* : 1/120 for E version.
** : 1/50 for E version.

Selecting the TEST OUT signal

The TEST output terminal on the left of the camera is factory-preset so that the composite video signal (VBS) is output. However, it is also possible to output any one of R, G, or B signal by internal switch. (* R, G or B signal does not have a color component. Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.)



To switch this, remove the side cover on the right of the camera, then change the setting of the "PIX SELECT" switch on the internal CP board. When the test output signal is changed, the signal to be monitored on the viewfinder screen is also changed accordingly.

For further detailed operation, consult your JVC-authorized dealer.

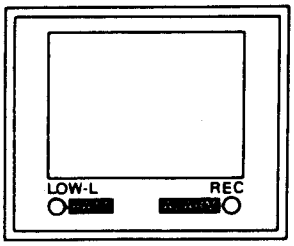
The type of signal to be output to the TEST output terminal can be confirmed in the viewfinder screen using the display function of this camera.

Refer to the character display indication described later.

WARNING INDICATION AND CHARACTER DISPLAY

Warning indication using LEDs

The viewfinder includes the following indicator lamps, giving a warning during shooting.



- LOW-L/BATT (red)

LOW-L: Lights when the camera's video output is too low. Even if the lamp is lit, recording can be done but the picture will be dark; however, this indicates that additional lighting is necessary.

BATT: Flashes when the battery in the camera or VTR (depending on the VTR used) is almost exhausted.

- REC (green)

REC: The REC (recording) lamp lights interlocked with the indicator lamp in front of the viewfinder.

ALARM: Flashes when the VTR connected to the camera has trouble or the tape comes to the end (depending on the VTR used).

Note:
The above warning functions depend on the VTR connected. Refer to the VTR's instruction manual.

Video signal level indication

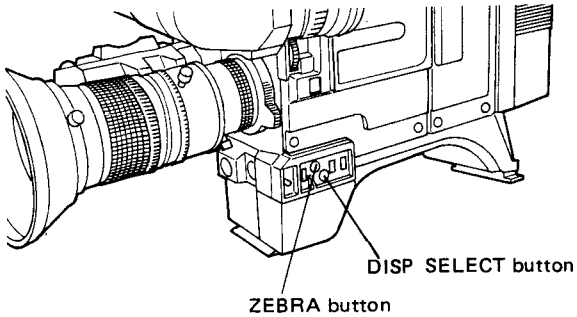
Video signal level (90 to 100 % of shooting image) is indicated by zebra pattern in the viewfinder screen.
When the auto iris is activated, the lens iris is automatically adjusted, however, in the case it is desired to adjust it manually, this zebra indication is useful as an adjustment standard.
This zebra indication can be on/off with the zebra button.

Character display indication

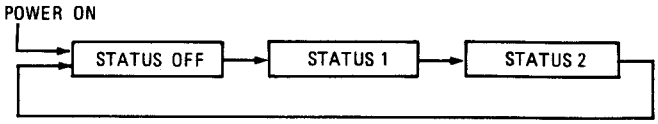
The display indications include the STATUS indication, MODE indication and WARNING indication; the details of each are as follows:

1 STATUS indication

Various control switches and their settings are indicated by characters.
There are two display screens, which can be selected using the DISP SELECT button.



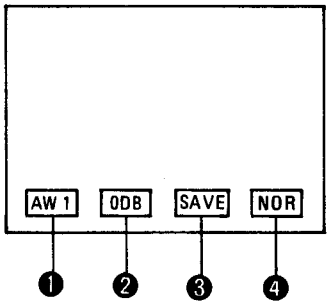
The DISP SELECT button is a push-button switch, which changes as follows every time it is pressed.



The STATUS OFF indicates no-indication state, to which setting the display is always initialized when the operation switch is switched ON from OFF.

STATUS 1 indication

The following display appears in STATUS 1 mode.



❶ Position indication of the W.BAL switch

PRE: Indicates that the W.BAL switch is set to the "PRESET" position. The white balance of the camera is set to the preset (3200K) state and the auto setup function cannot be activated.

AW 1 : Indicates that the W.BAL switch is set to the "AUTO 1" position. The white balance of the camera is set to the balance which is held in the "AUTO 1" memory of the camera.
If the auto setup adjustment is made while this is indicated, the white balance will be automatically adjusted and the balance at this point will be rewritten to the AUTO 1 memory.

AW 2 : Indicates that the W.BAL switch is set to the "AUTO 2" position. Just as in the above AUTO 1, the white balance of the camera is set to the balance stored in the "AUTO 2" memory. If the auto setup adjustment is made while this is indicated, the AUTO 2 memory will be rewritten.

MANU: This is indicated if the optional remote control unit RM-P200 is connected and its W.BAL switch is set to the MANUAL position. Note that the auto setup adjustment or auto white balance adjustment cannot be done from the camera.

* For the auto setup adjustment, refer to page 14.

❷ Position indication of the HI-SENS switch

0 : Indicates that the HI-SENS switch is set to the "0 dB" position.

+9 dB : Indicates that the HI-SENS switch is set to the "+9 dB" position.

+18 dB : Indicates that the HI-SENS switch is set to the "+18 dB" position.

❸ Indication of the VTR mode

[SAVE]: Indicates that the VTR is in the SAVE mode.
[STDBY]: Indicates that the VTR is in the ST-BY mode.
[REC]: Indicates that the VTR is in the REC mode.

Note:
"SAVE" indication is only when a 14-pin VTR with a power save facility is used. Nothing is indicated when a VTR other than this is used.

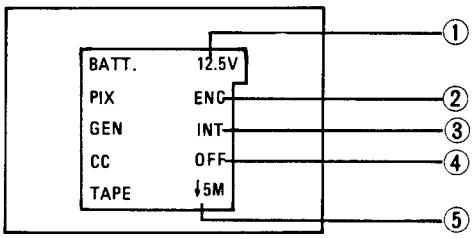
❹ Electronic shutter speed indication

[NOR] : Indicates that the shutter speed is set to **1/60 sec.
[100] : Indicates that the shutter speed is set to ***1/100 sec.
[250] : Indicates that the shutter speed is set to 1/250 sec.
[500] : Indicates that the shutter speed is set to 1/500 sec.
[1000] : Indicates that the shutter speed is set to 1/1000 sec.
[2000] : Indicates that the shutter speed is set to 1/2000 sec.

* For changing the electronic shutter speed, refer to page 16.
**1/50 for E version.
***1/120 for E version.

STATUS 2 indication

The following display appears in the STATUS 2 mode.



① Battery voltage indication

The battery voltage will be indicated digitally.

② Signal indication of TEST OUT/VF OUT

The type of video signal appearing at the camera's TEST OUT terminal and viewfinder screen is indicated.

[PIX ENC]: The encoder output (Composite) signal is output.
[PIX R]: The red signal is output.
[PIX G]: The green signal is output
[PIX B]: The blue signal is output.

Note:
- The camera is factory-preset to the "PIX ENC" position. To obtain another signal output, change the setting of the "PIX SELECT" switch inside the camera. (Refer to page 16.)
- When the foregoing PIX R, PIX G or PIX B signal is output, the signal does not have a color component. Therefore, even if it is connected to a color monitor, it appears as a monochrome signal on the screen.

③ GENLOCK mode indication

Indicates the genlock mode of the camera.

[GEN INT]: Operates by the internal SSG (sync signal generator) of the camera (INT mode).
[GEN EXT]: Indicates that the camera is genlocked to an external signal (EXT mode).

* As for the connection with the external signal source in the EXT mode, refer to page 19.

④ Contour indication

[CC ON]: The contour compensation is being made.
[CC OFF]: The contour compensation is not being made.

* To switch ON or OFF the contour compensation, use the internal switch. For its operation, refer to page 16.

⑤ Remaining tape indication

When the amount of remaining tape in the VTR becomes low, the remaining time is indicated. This is indicated only when the VTR used has a tape remaining detection circuit and can output a signal to the camera.

[TAPE ↓ 10M]: When the tape remaining time becomes less than 10 minutes, this is indicated.
[TAPE ↓ 5M]: When the tape remaining time becomes less than 5 minutes, this is indicated.

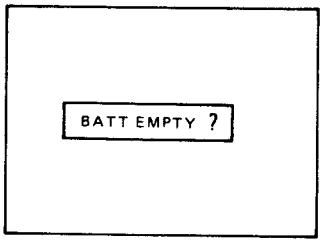
* When the remaining tape time is 10 minutes or more, nothing is indicated.

2 MODE indication

The execution mode during the auto setup adjustment and auto white balance adjustment will be indicated.
When the auto setup button is pressed, if the status indication is displayed, it will disappear, and be replaced by the mode indication.
Upon completion of the auto setup operation or auto white balance operation, the results will be indicated for about 4 seconds, then the original status indication will be resumed.
For the details of the execution mode indication, refer to "auto setup adjustment" on page 14.

3 WARNING indication

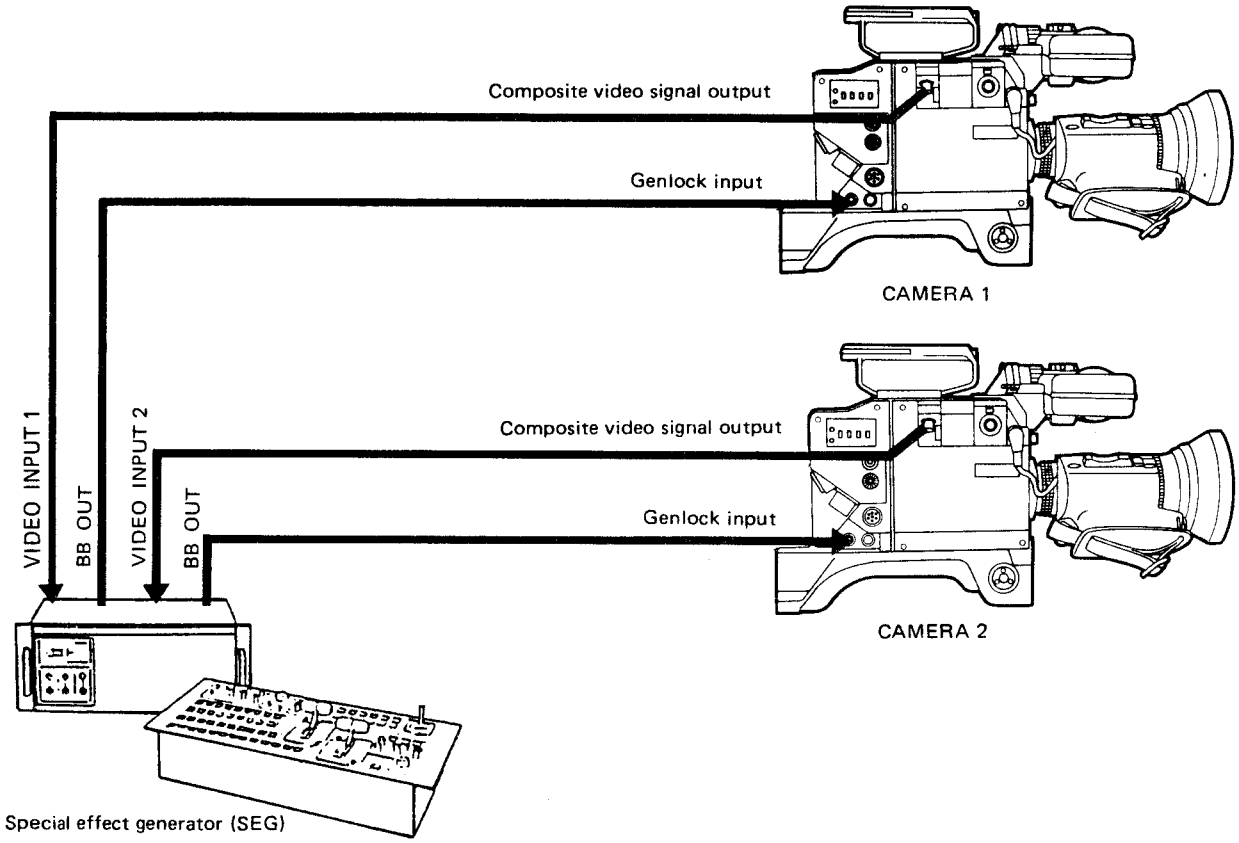
When the battery is exhausted, the following indication will flash.
This indication will supersede other indications (STATUS and MODE).
When this indication appears, replace the old battery pack with a fully-charged battery pack as soon as possible.



GENLOCK OPERATION

When pictures from more than one camera are processed (fade-in, fade-out, mix/wipe) using a special effect generator (SEG), etc., each camera should be genlocked.

The genlocking is done by supplying the same composite video signal (VBS) or black burst signal (BB) to the GENLOCK input terminal of each camera.



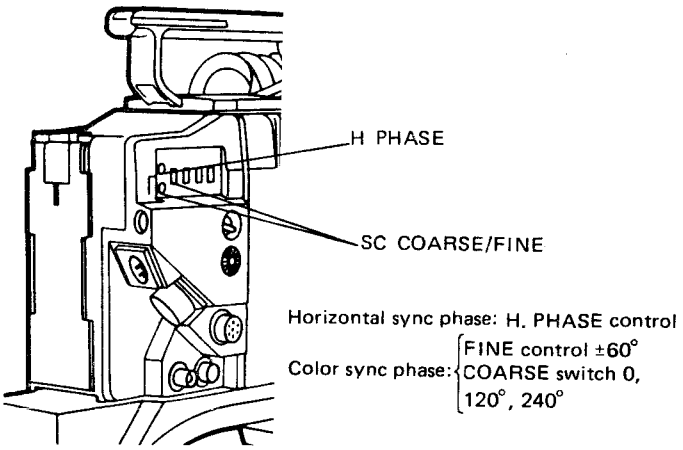
Note:

- It is not possible to genlock this camera using the playback signal of the VTR. If you do, it may cause sync disorder or fluctuations in color phase. However, this is not a failure, but because the VTR's playback signal has time axis fluctuations equivalent to wow & flutter of a tape recorder. When the VTR's playback signal has to be used as the reference signal, the signal should be corrected using a time base corrector (TBC), etc.

Phase adjustment

The illustration above shows an example of connecting a special effect generator to the cameras. If more than one camera is used as in this example, the horizontal phase and subcarrier phase of each camera output (VIDEO OUT) should be adjusted and matched with the reference signal supplied to the camera from outside.

For adjustment, use the following switches and controls on the left side of the camera.



CAMCORDER CONFIGURATION WITH VTR

This camera is designed to configure a Camcorder with an S-VHS VTR (specified in the following).
For use of this application, the following units are optionally required.

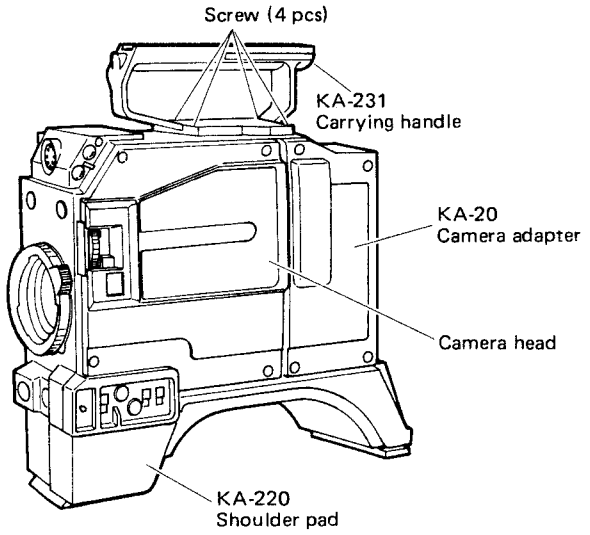
VTR to be used	Cassette size	Recording hours (max.)	Options required
BR-S410 BR-S411	Standard S-VHS	2 hours (SP mode)	KA-220 Shoulder Pad KA-232 Carrying Handle
BR-S420C	S-VHS C (compact)	20 minutes (SP mode)	KA-220 Shoulder Pad (Use Carrying Handle provided with BR-S420C.)

BEFORE INSTALLATION

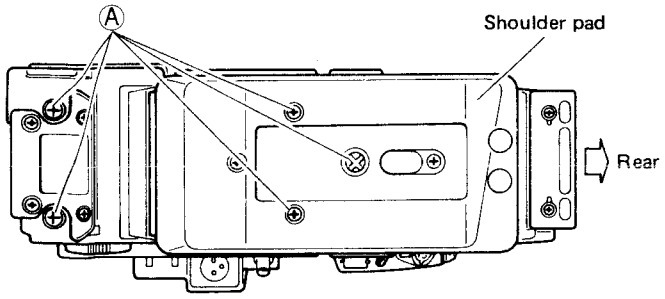
The following describes about a case that the camera has been equipped with the camera adapter KA-20, shoulder pad KA-220 and carrying handle KA-231.

Camera Adapter Separation

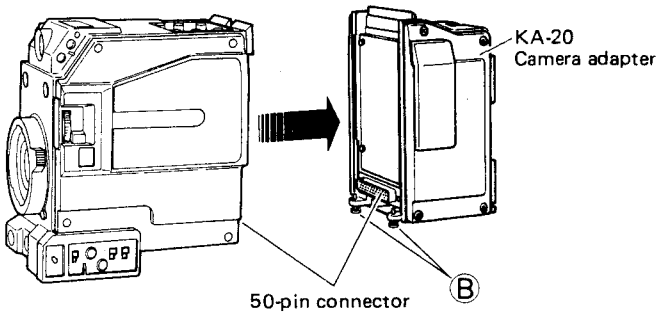
1 Detach the carrying handle from the camera by removing four screws retaining it.



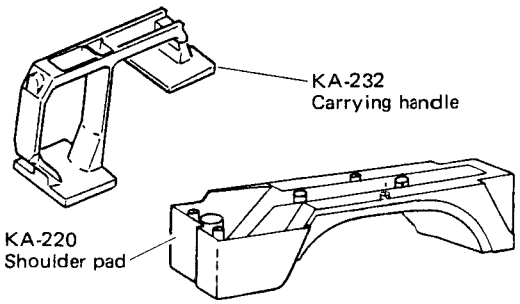
2 The following illustrates the bottom view of the shoulder pad attached to the camera. Loosen five screws Ⓐ by turning them counterclockwise and detach the shoulder pad.



3 Loosen two screws Ⓑ retaining the camera adapter to the camera head on the bottom by turning them counterclockwise, and separate the camera adapter from the camera head.



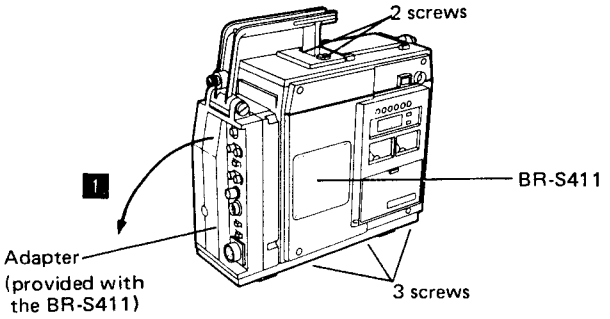
4 Attach the shoulder pad in the reverse order of the step 2.



INSTALLATION

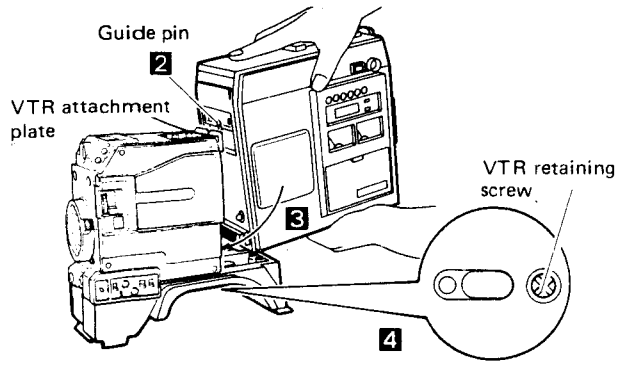
Mounting the S-VHS VTR (BR-S411)

1 Remove the adapter from the BR-S411.
The adapter is secured to the BR-S411 with three screws on the bottom and two screws on the handle grip on the top. To loosen these screws, use flat head and Phillips screwdrivers.

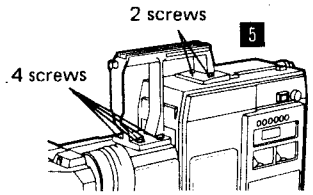


2 3 Aligning the guide pin of the BR-S411 to the V-groove on the VTR attachment plate of the camera, press the BR-S411's 50-pin connector against its counterpart on the camera.

4 After confirming that the 50-pin connections have been made correctly, secure the two units by tightening the VTR retaining screw from underneath the shoulder pad of the camera with a screwdriver.



5 Install the carrying handle (KA-232, accessory) onto the camera head and VTR using a Phillips screwdriver.

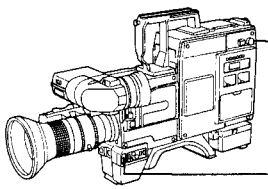


Note: Make sure to mount the VTR on the camera before attaching the carrying handle KA-232. If not, the VTR cannot be mounted.

POWER SUPPLY

- This camera is powered from the VTR via the 50-pin connector.
Supply power to the VTR using the optional NB-G1 battery pack or the AA-P200/AA-P250 AC power adapter.
To use the battery pack, the optional battery holder (accessory of the BR-S411) is also necessary.
For the power supply method or connection, refer to the instruction manual of the relevant power unit or the VTR.

BASIC RECORDING PROCEDURE (with BR-S411, NB-G1)



Turn the power on.

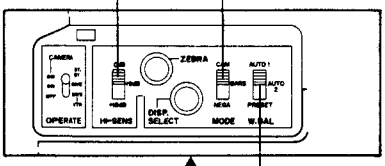
Set the OPERATION switch to "ON/ST-BY".

Insert a video cassette tape. → Refer to the instruction manual of the VTR.

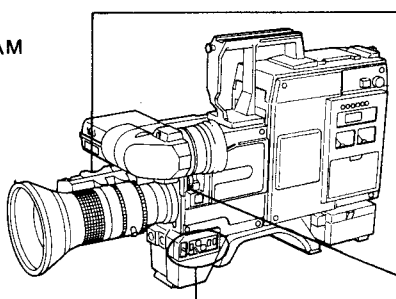
Set the switches as illustrated.

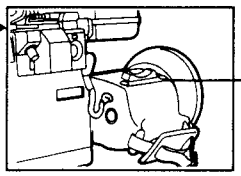
Camera/Color bar switch: CAM

HI-SENS switch: 0 dB

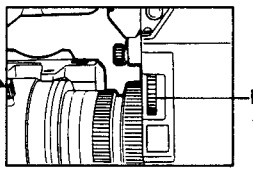


WHITE BAL switch: AUTO 1 or AUTO 2





IRIS MODE switch: AUTO



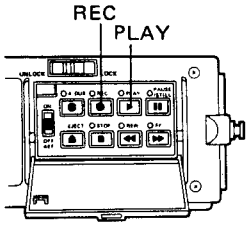
Filter turret: Set referring to the following table.

Filter position	Color temperatrue	Shooting conditions
1	(closed)	When not in use
2	3200K	At sunrise or sunset in a studio
3	5600K	Outdoors on cloudy or rainy days
4	5600K +25 % ND	Outdoors; bright or direct sun

VTR: STOP mode

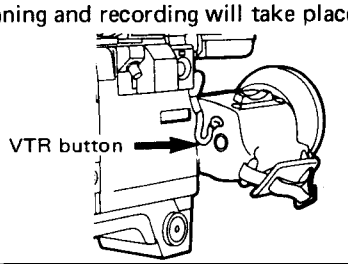
Perform auto setup adjustment. → See page 14.

Open the cover of the operation pocket located on top of the VTR. Set the VTR to the record-pause mode by pressing the PLAY button while holding the REC button pressed.



VTR: REC PAUSE mode

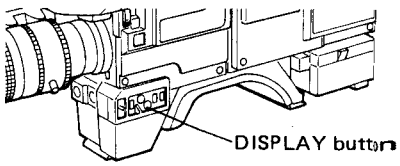
Press the VTR button on the lens unit. The tape will start running and recording will take place.



To stop recording, press the VTR button again. The VTR will enter the record-pause mode.

Viewfinder indication

When the STATUS 1 indication is displayed in the viewfinder screen by operating the DISPLAY button, the operations of the VTR can also be checked in the viewfinder screen.



- "STDBY" is displayed.
- "REC" is displayed.

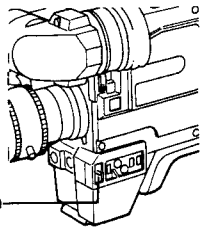
Notes:

- Linked with the viewfinder display, the REC/ALARM indicator LED (green) under the viewfinder screen goes off for STDBY and on for REC. This LED indicator functions irrespective of the setting of the DISPLAY button.

POWER SAVING OPERATIONS

Power save functions are incorporated in this system, cutting the power consumption of either the VTR or both the VTR and camera while in the record-pause mode. To save power, after the record-pause mode is engaged, proceed as follows:

Record-pause mode



Set the camera's OPERATION switch to "ON/SAVE". This switches the VTR power off while remaining in the record-pause mode, with the camera power still on. (Viewfinder is on.)

Power saving on VTR

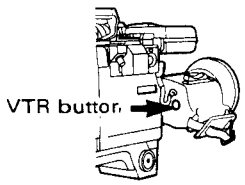
Set the camera's OPERATION switch to "OFF/SAVE". This switches the VTR and camera power off while remaining in the record-pause mode. (Viewfinder is off.)

Power saving on VTR and camera

To restart recording, set the OPERATION switch to "ON/ST-BY". Both the VTR and camera are powered and the VTR enters the record-pause mode. (Viewfinder turns on.)

Releasing the power save function

Press the VTR button on the lens unit to start shooting.



Note:

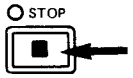
If the VTR's OPERATION button is pressed in the power save mode, the VTR is turned on and enters the stop mode automatically from the record-pause mode. Recording cannot be restarted by the above-mentioned procedure from this mode. If this happens, first set the VTR to the record-pause mode.

ENDING RECORDING

To end recording, proceed as follows:

Record-pause mode

Open the cover of the operation pocket on top of the VTR and press the STOP button.



Set the camera's OPERATION switch to "OFF/SAVE".

Set the VTR's POWER switch to OFF.

Note:

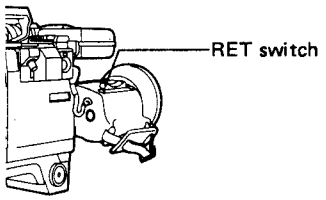
If the OPERATION switch is set to "OFF/SAVE" while in the record-pause mode, the power save function operates and the power of the camera and VTR is turned off while in the record-pause mode, in which the tape is still loaded around the head drum of the VTR. To avoid damaging the tape and video heads, be sure to follow the procedure described above.

MONITORING THE PLAYBACK PICTURE

VTR: Stop mode

Press the PLAY button of the VTR.

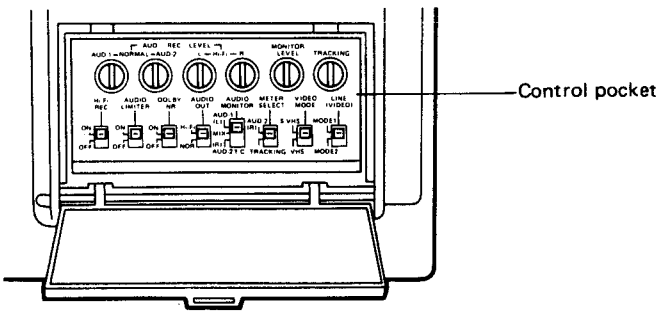
Press the RET switch on the lens unit; the playback picture can be monitored on the viewfinder screen.



To stop playback, press the STOP button of the VTR.

AUDIO OPERATION AND LEVEL CONTROL

All controls related to audio recording are located in the control pocket of the VTR. For operations of these controls refer to the instruction manual of the VTR.



WARNING INDICATION AND CHARACTER DISPLAY

Warning Indication by LEDs

See page 17.

Character Display Indication

The display indications include the STATUS indication, MODE indication and WARNING indication.
The details of indications are as follows.

Note: In the following cases, any character display indication does not appear.

- The RET switch of the lens is pressed.
- The RET switch of the camera is set to ON.
- During monitoring of playback picture (see page 23)

1 STATUS indication

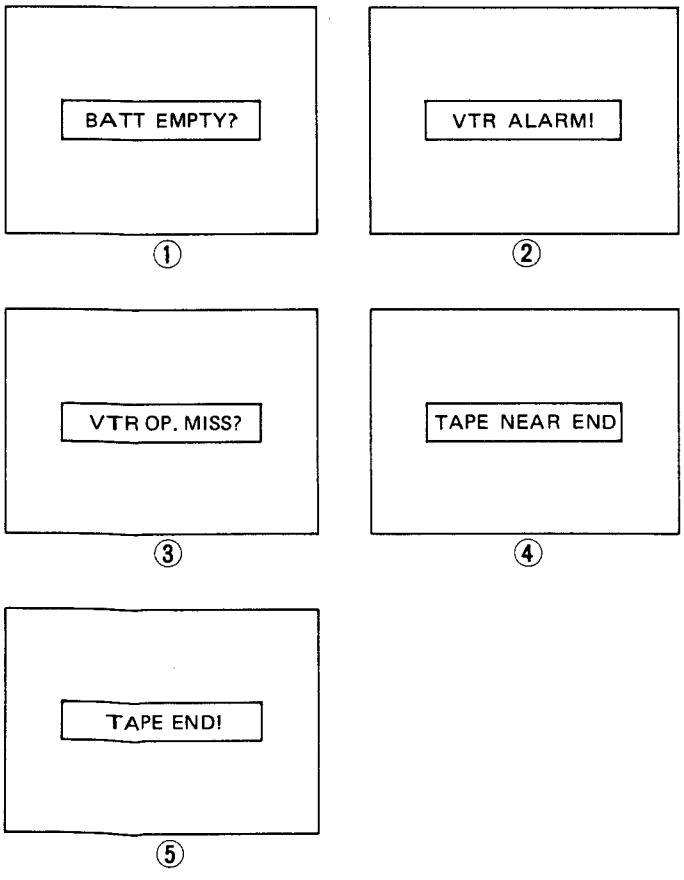
"STATUS 1" and "STATUS 2" indications (see page 17).

2 MODE indication

The execution mode during the auto setup adjustment will be indicated.
When the auto setup button is pressed, if the status indication is displayed, it will disappear, and be replaced by the mode indication.
Upon completion of the auto setup operation, the results will be indicated for about 4 seconds, then the original status indication will be resumed.
For the details of the execution mode indication, refer to "auto setup adjustment" on page 14.

3 Warning display

When the VTR or camera malfunctions, the display indicates the type of malfunction. This warning display has priority over other indications (STATUS or MODE). The following five indications are given.

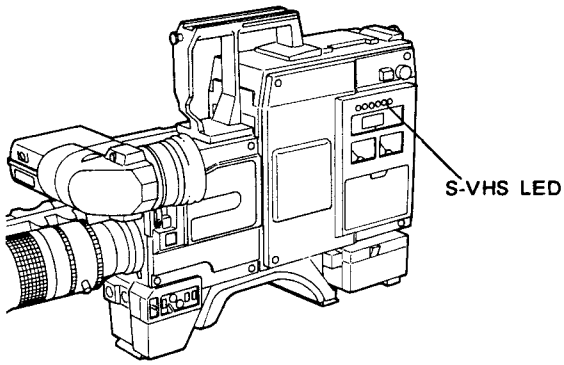


① BATT EMPTY? :
This display appears when the battery is becoming low. As soon as possible after this display appears, replace the battery with a charged one.

② VTR ALARM! :
This display appears when there is an abnormality in tape running or when moisture has condensed on the head drum.

③ VTR OP. MISS? :
This display appears when the VTR is not recording properly after the VTR button on the front panel or lens unit of the camera has been pressed. Possible causes for this are as follows (check each possible cause).

- **A regular VHS cassette is inserted in the S-VHS mode. Check the cassette tape. The S-VHS LED will blink in this case.**



- The VTR has not been engaged in the record-pause mode.
  First set the VTR to the record-pause mode.
- The STOP button on the VTR was pressed, instead of the VTR button on the camera, during recording.

④ TAPE NEAR END :
This display appears during recording when the remaining tape length is less than three minutes. To continue recording, a new tape should be inserted.

⑤ TAPE END! :
This display appears when the tape is coming to an end during recording. With this indication, the VTR automatically enters the stop mode, warning that recording is possible only with a new tape.

TROUBLESHOOTING

- Auto setup or auto white balance adjustments cannot be completed.
  - Is the filter turret correctly set?
  - Is the subject you are shooting a colored object?
- Auto setup or auto white balance adjustment cannot be performed.
  No display appears in the viewfinder screen.
  - Are you pressing the RET button on the lens?
  - Is the camera's RET switch set to ON?
  - Are you monitoring the VTR playback picture?
- Viewfinder screen is darker, or no raster appears.
  Scenes being shot are not visible in the viewfinder.
  - Are the viewfinder's contrast and brightness controls set properly.
  - Is the filter turrent correctly set? Is the lens iris colosed?
  - Is the camera's RET switch set to ON?

SPECIFICATIONS (U version)

Color Video Camera KY-17FIT

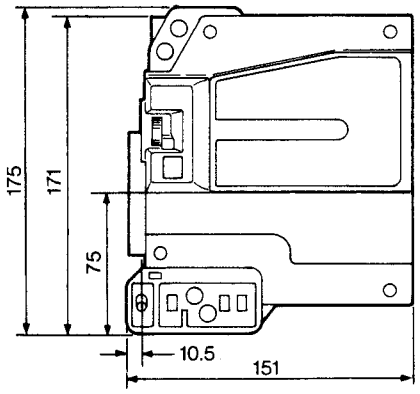
• Camera head

Image pickup device	: 1/2-inch frame interline CCD x 3 (R, G, B)
Color separation optical system	: 3-color separation prism
Effective number of pixels	: 726(H) x 492(V), 360,000 pixels
Color system	: NTSC (R-Y, B-Y method encoder)
Synchronizing system	: Internal (built-in SSG) (Conforming to RS-170A)
Lens mount	: 1/2" bayonet
Optical filter	: 3200 K, 5600 K, 5600 K + 25% ND
Sensitivity	: F5, 2000 lux
Practical minimum illumination	: F1.4, 20 lux (+18 dB)
Sensitivity selection	: +9 dB, +18 dB
S/N ratio (standard)	: 60 dB typical (contour correction: OFF, gamma: 1, bandwidth: 4.2 MHz, Matrix: OFF)
Horizontal resolution	: Typical 700 TV lines (Y channel) 540 TV lines (each R, G and B channel signal)
Registration (except lens distortion)	
Zone 1	: 0.05% or less (circle 80% of picture height)
Zone 2	: 0.05% or less (circle of picture width)
Zone 3	: 0.05% or less (zone outside the above)
Contour correction	: Horizontal : dual-edged Vertical : 2H (with comb filter)

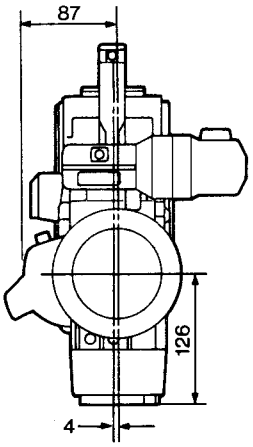
Video signal output	
50-pin connector	: Composite video signal (VBS)=1Vp-p Separate Y/C signals (compatible with S-VHS) Component signals (Y/R-Y/B-Y for MII or R/G/B ... 0.7 Vp-p, 75 Ω) (Switchable by VTR)
Test output terminal	: Composite video signal (VBS)=1Vp-p
Audio signal output	
50-pin connector	: Monaural/stereo output
Mic. input signal	: 6P/XLR-3, –52 dBm, 600 ohms (balanced when low signal is output and unbalanced when high signal is output)
Electronic shutter speed	: 1/60 (normal) and 1/100, 1/250, 1/500, 1/1000, 1/2000 selectable
Power source	: 12 V DC (10.5 to 15 V) (supplied through 50-pin connector)
Current consumption	: 1.2 A (camera head only)
Operating temperature range	: –5°C to +45°C
Weight	: 1.7 kg (camera head only)

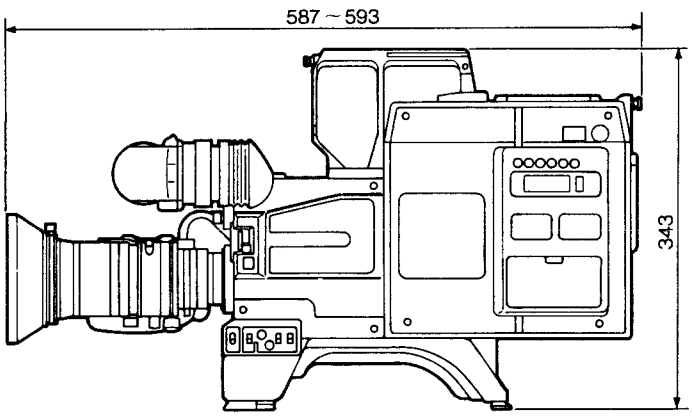
Design and specifications are subject to change without notice.

• Dimensions (unit: mm)



Camera head only
(Dockable with BR-S411 VTR)





Dimensions with BR-S411 VTR dockable

SPECIFICATIONS (E version)

Color Video Camera KY-17FIT

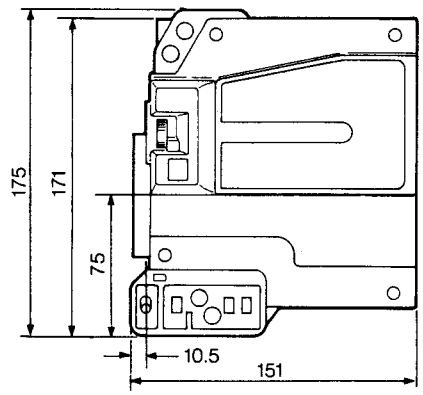
• Camera head

Image pickup device	: 1/2-inch frame interline CCD x 3 (R, G, B)
Color separation optical system	: 3-color separation prism
Effective number of pixels	: 716(H) x 582(V), 420,000 pixels
Color system	PAL (R-Y, B-Y method encoder)
Synchronizing system	: Internal (built-in SSG)
Lens mount	: 1/2" bayonet
Optical filter	: 3200 K, 5600 K, 5600 K + 25% ND
Sensitivity	: F5, 2000 lux
Practical minimum illumination	: F1.4, 20 lux (+18 dB)
Sensitivity selection	: +9 dB, +18 dB
S/N ratio (standard)	: 58 dB typical (contour correction: OFF, gamma: 1, bandwidth: 5.0 MHz, Matrix: OFF)
Horizontal resolution	: Typical 700 TV lines (Y channel) 540 TV lines (each R, G and B channel signal)
Registration (except lens distortion)	
Zone 1	: 0.05% or less (circle 80% of picture height)
Zone 2	: 0.05% or less (circle of picture width)
Zone 3	: 0.05% or less (zone outside the above)
Contour correction	: Horizontal : dual-edged Vertical : 2H (with comb filter)

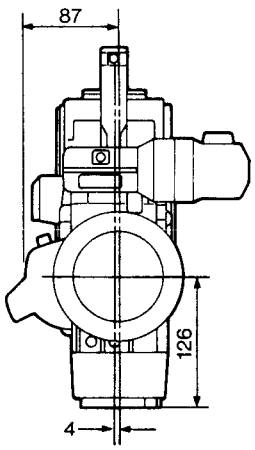
Video signal output	
50-pin connector	: Composite video signal (VBS)=1Vp-p Separate Y/C signals (compatible with S-VHS) Component signals (Y/R-Y/B-Y for MII or R/G/B ... 0.7 Vp-p, 75 Ω) (Switchable by VTR)
Test output terminal	: Composite video signal (VBS)=1Vp-p
Audio signal output	
50-pin connector	: Monaural/stereo output
Mic. input signal	: 6P/XLR-3, –52 dBm, 600 ohms (balanced when low signal is output and unbalanced when high signal is output)
Electronic shutter speed	: 1/50 (normal) and 1/120, 1/500, 1/500, 1/1000, 1/2000 selectable
Power source	: 12 V DC (10.5 to 15 V) (supplied through 50-pin connector)
Current consumption	: 1.2 A (camera head only)
Operating temperature range	: –5°C to +45°C
Weight	: 1.7 kg (camera head only)

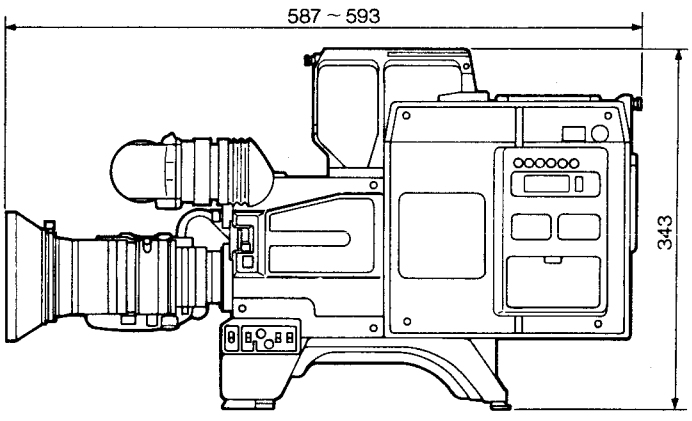
Design and specifications are subject to change without notice.

• Dimensions (unit: mm)



Camera head only
(Dockable with BR-S411 VTR)





Dimensions with BR-S411 VTR dockable